```
Post-processing: Minimum Match 0%
Maximum Match 100%
Fisting first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                       Database :
                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM nucleic - nucleic search, using sw model
GenEmbl: *
1: gb_ba: *
2: gb_htg: *
3: gb_htg: *
4: gb_om: *
5: gb_oat: *
7: gb_ph: *
8: gb_ph: *
9: gb_pr: *
10: gb_pr: *
11: gb_et: *
11: gb_et: *
13: gb_et: *
14: gb_vi: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-842-628-1
1014
1 aaggaagtggagaaccagca.....ttttctgggaatactgataa 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    March 22, 2005, 05:50:41; Search time 4631 Seconds (without alignments) 10609.715 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                             4708233 seqs, 24227607955 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 5.1.6 Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                              9416466
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

17 18 19	10 113 114 115	0 4 12 10 12 13 12	0 0 0 0	Result
261.6 260.8	281 266.4 265.4 264.6 264.6	738.8 707.8 610.4 313 283.2 281.6	983.4 823.6 740.4	Score
	227.7 226.9 226.3 25.0 3		97.0 81.2 3 73.0	Query Match L
2837 2837 2837 346359	300 1125 1399 1047 348251 347356	1709 1709 2353 110000 110000	1017 308015 9937	Length
100			446	BO
A14577 E01113 BX640411	A27539 AR319786 ECASN AY560098 BX640423 BX640423 BX640437	AY659070 . AF056495 PPL2367120 CR543861_20 BX571965_16 CP000010_14	AR177619 AE016783 AE004563	ID
A14577 asparginase B01113 Genomic DNA BX640411 Bordetell	A27539 Pseudomonas AR319786 Sequence X12746 Erwinia chr AY560098 Erwinia c BX640423 Bordetell BX640437 Bordetell X14777 Erwinia chr	AY659070 Synthetic AF056495 Pseudomon AJ238710 Pseudomon Continuation (21 o Continuation (17 o Continuation (15 o	AR177619 Sequence AE016783 Pseudomon AE004563 Pseudomon	Description

S

241 AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCCATGGCACC 300

B 8	Qy Db	D Q D Q	Que Bes Mat	RESULT 1 AR177619 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS TITLE JOURNAL FEATURES BOURCE ORIGIN	CC CC CC CC CC A4444033765433210
181 CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACCTGCTCAAGCTGGCAGGCA	121 GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG	1 AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC	Query Match 97.0%; Score 983.4; DB Best Local Similarity 98.6%; Pred. No. 3e-108 Matches 1003; Conservative 0; Mismatches	AR177619 Sequence 1 from AR177619.1 GI Unknown. Unknown. Unclassified. 1 (bases 1 to Roberts, J., Man Genetically enganticancer the: Patent: US 631: 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	0 255 25.1 10893 1 AE015308 1 255.4 24.7 11000 1 AE006841 48 2 250.4 24.7 11000 1 AE006526 4 250.2 24.7 10749 1 AE005526 4 250.2 24.7 266658 1 AE005526 5 245.4 23.8 11530 1 ECCANSUI 7 241.8 23.8 11530 1 ECCANSUI 7 241.8 23.8 11000 1 U00096 30 9 241.8 23.8 111000 1 U0098377 1 240.8 23.7 1848 6 173512 2 240.8 23.7 1071 6 AR384001 2 240.8 23.7 1074 6 AR384001 2 240.8 23.7 1074 6 AR3896001 2 230.8 22.8 305961 1 AE016933 2 230.8 22.8 305961 1 AE01693 5 228.8 22.7 304500 1 AP005953 5 228.8 22.6 303450 1 AP005953 6 228.4 22.5 110107 1 AY36009 6 228.4 22.5 110107 1 AY36009 2 219 21.6 1035 1 WSANSAGEN 2 219 21.6 1133 6 AR45427 2 219 21.6 1133 6 AX464427 2 219 21.6 2505 1 WSDCUANGA 2 219 21.6 1133 6 AX46427 2 219 21.6 2505 1 WSDCUANGA 2 2 2 2 2 2 3 10000 1 AE646063 2 2 2 3 2 3 10 110000 1 AE571658 2 2 3 2 3 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1
CGACGACCTGCTCAAGCTGGCAAGC 240                    CGACGACCTGCTCAAGCTGGGCAAG 240	CGACCTGGCCAATGTGCGCGGCGAG 180	GGTGATCCTGGCCACCGGCGGCACC 60	B 6; Length 1017; 8; 11; Indels 3; Gaps 1;	A linear PAT 17-DEC-2001 man,N. and Freeman,A.G.	AE015308 Shigella AE016988 Shigella Continuation (49 o AE005526 Escherich AP002563 Escherich AP002563 Escherich AP002563 Escherich M34277 E.coli L-as M34274 E.coli L-as Continuation (31 o U28377 Escherichia 173512 Sequence 15 U06943 Synthetic c AR384001 Sequence AE016937 Bacteroid AP005953 Bradyrhiz AP005953 Bradyrhiz AP005085 Vibrio pa AY560097 Pectobact AY327441 Pectobact Continuation (13 o X83689 W.succinoge AR157944 Sequence AX464427 Sequence AX464427 Sequence AX9215 W.succinoge BX571658 Wolinella Continuation (28 o AL646063 Ralstonia

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
AE016783/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                श्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       占
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                             ŒYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shoo
   TITLE
                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                  1 (bases 1 to 308015)
Nelson,K., Paulsen,I., Weinel,C., Dodson,R., Hilbert,H., Fouts,D., Rill,S., Pop,M., Martins Dos Santos,V., Holmes,M., Brinkac,L., Beanan,M., DeBoy,R., Daugherty,S., Kolonay,J., Madupu,R., Nelson,W., White,O., Peterson,J., Khouri,H., Hance,I., Lee,P., Nelson,W., White,O., Peterson,J., Khouri,H., Hance,I., Lee,P., Nelson,W., White,O., Peterson,J., Khouri,H., Hance,I., Lee,P., Nelson,W., Weiler,H., Lauber,J., Rizzo,M., Lee,K., Kosack,D., Moszes,A., Utterback,T., Rizzo,M., Lee,K., Kosack,D., Mossel,D., Wedler,H., Lauber,J., Hoheisel,J., Straetz,M., Helm,S., Kiewitz,C., Eisen,J., Timmis,K., Duesterboft,A., Tummler,B. and Fraser,C.
                                                                                                                                                                                                                                                                                                                                                                                                          308015 bp
Pseudomonas putida KT2440 sectio
AE016783 AE015451
AE016783.1 GI:26557027
                                                                                                                                                                                                                                                                                                             Pseudomonas putida KT2440
Pseudomonas putida KT2440
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Complete genome sequence and comparative analysis of the
                                                                                                                                                                                                                                                                                           Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACACCCTGGAAGAAACCGCCTACTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCGTGGTCGGTTCCATGCGCCCGGCACCCCATGTCCGCCACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGATAA 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACTGGGTCGTGGCCCACGACCTGAACCCCGCAGAAGGCCCCGCATCCTGGCGATGGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAC---GTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCCATGGTGGTAGGCAAGGCCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACACCCTGGAAGAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACTGGGTCGTGGCCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCCACGTCAACCAGGGCGGTTTCGTGCTGACGTAACGCCGAGCAGCACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCACAGAACGCCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rcaagagegectegeceeecegecatgetgeaggaaggeaagtegtaetgetee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 section
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    L DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BCT 12-DEC-2002 complete genome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SdC
                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       metabolically versatile Pseudomonas putida KT2440
Environ. Microbiol. 4 (12), 799-808 (2002)
2 (bases 1 to 308015)
Nelson, K., Paulsen, I., Weinel, C., Dodson, R., Hilbert, H., Fouts, Gill, S., Pop, M., Martins Dos Santos, V., Holmes, M., Brinkac, L., Beanan, M., DeBoy, R., Daugherty, S., Kolonay, J., Madupu, R., Nelson, W., White, O., Peterson, J., Khouri, H., Hance, I., Lee, P., Holtzapple, E., Scanlan, D., Tran, K., Moazzez, A., Uterback, T., Rizzo, M., Lee, K., Kosack, D., Moestl, D., Wedler, H., Lauber, J., Hohelsel, J., Straetz, M., Heim, S., Kiewitz, C., Eisen, J., Timmis, T., Tim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (05-NOV-2002) The Institute for Genomic Medical Center Dr., Rockville, MD 20850, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Duesterhoft, A., Tummler, B. and Fraser, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACHACIDAACOLKLISSEGAVIGASKUPVYQGERSKA VETTRLEVDAHSERQWRKIGF
YSVLUNQGGQAALMARMLEIGHKTELTENAKL PEET IVLGLISRUNMCELEHEETDAVAGA
HEKEGMELAVTGLTDKEYDTMERMLAAGAFVEYQF 1QPSAAEAROLAEMEELLINREGS
TEALVGRMLYEHLETJAHIHFAGGEQGHFFQWVBSRTESGKEPVDI LATRREND EPGTDF
YYRLIPVQGVIVHKTHITYEMGEPQKLKRVKQLEYAGDMHAAALDGYGERHRANEEETF
EALI PAYARYQEMLDNAEYFVETTE IRGPVCRGQIATDVIRDNEWALFGEPAFDRYITDA
KYRGERTPLLAMEGQIDVGSVLSIMMAYDDKADLYEKLAREAYAEMPAFWRSTIMAG
KYRGERTPLLAMEGQIDVGSVLSIMMAYDDKADLYEKLAREAYAEMPAFWRSTIMAG
KYRGERTPLLAMEGQIDVGSVLSIMMAYDDKADLYEKLAREAYAEMPAFWRSTIMAG
NDNALLSIFRHEDSASVTKGLVGDVPLTVMLFDYPLFERTYYQLAVNFDVYGNVSHQL
QTRLYEDLINGSENDREIRLIDGATGANAAADDEJURKQLECSREQMSEERRAAGGSKERLVSR
LDBRANERDFGLKLIQGTGSIMAAADDEDINTRCQGAFCSREQMSEERRAAGGSKERLVSR
PAAGLKVINQLEEATMLRIEGQDGQRQVYSLLRNRAHSNVAFILGEAYRYQFGLDTLT
LYFGYULSSYBMFIRNIFTKDVEPETTEN
                                                                                                                                                                                                                        /codon start=1
/trans[ table=11
/trans[ table=11
/produce acetyltransferase Act, putative"
/protecin_id="AAN67990.1"
/protecin_id="AAN67990.1"
/db xref="GI:24983932"
/translation="MQPFAGEPAPTTGTALLSRIALASALDTGLNAPPSAGYSMLYSL
/translation="MQPFAGEPAPTTGTALLSRIALASALDTGLNAPPSAGYSMLYSL
/ALRAPAMVVVCHHEMQIFFDFHATGFIGQLLTDRGAVGVDIFFVISGLVIYLSTRD
RTTUBERQFLLNRALA; VPAYWFYTALMAILLLAFSQMWHLLFUSLLFIPAE
NPGGYGLYPTLNVGWTLNFEMFFYLLFGLAFLVRQRHHLLLVTAALLGVAGWAIYCLLASGNGV
VSREYNNDIYSEFLLGIGVGVYLYRRGLIRGGSVSVYLIHVLVLYAGWFASQRLHKNFFL
GLPSAMIVLAFVAMEPLFQGNRLLKALGDCSYSVYLIHVLVLYAGWFASQRLHLNFFL
TFALCVPSIGLMSWFSYQWLERGLYRRMQAWLAAQRGPAPEYALSRVNC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /locus tag="PP2376"
/note="similar to GP:5257182, and GP:5257182; identified by sequence similarity; putative"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /locus_tag="PP2377"
/note="similar to GP:5257179, and
by sequence similarity; putative"
                                                                                                                     /locus_tag="PP2378" 3710. .4294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HDLNSYIKETEPVEAGVLDMNRYENL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="esterified fatty acid cis/trans isomerase"
/protein id="AAN67989.1"
/brotein id="AAN67989.1"
/db xref="61:2498391"
/translation="MVHRILAGAFALLISGAVFGQAPQSSPAISYTRDIQPIFTEKCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Pseudomonas putida KT2440"
/mol_type="genomic DNA"
   /locus tag="PP2378"
/note="gimilar to GB:M68840, GB:X60819,
/note=187351, PID:187353, and PID:187355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /locus_tag="PP2377"
2500. .3651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="cti"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:160488"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /strain="KT2440"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _locus_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene="cti"
                                                                                          'gene="yhgI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .308015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tag="PP2376"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GP:5257179; identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bisen, J., Timmis, K.,
            SP:P21397,
identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Research, 9712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fouts, D.,
            Å
```

gene

SdC

```
/transT_table=11
/product="transporter, putative"
/product="maississerpy putation="transporter, putatio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /locus_tag="pp2381"
/locus_tag="pp2381"
/locus_tag="pp2381"
/codon_arrer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transI tartal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /locus____
/1ocus____
/10 - 5099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /locus_tag="PP2382"
/note="similar to GB:M11189, SP:P04190, SP:P14488, and PID:142604, identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /locus tag="PP2380"
/note="similar to GB:D13178, SP:Q08751, PID:398125,
GB:D13178, SP:Q08751, and PID:398125, identified by
sequence similarity, putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="Sco1/SenC family protein"
/protein_id="AAN67992.1"
/db_xref="GI:24983935"
/translation="MRREPDREVPRAGTEPVKDGFMNDLLTRRAVVAGMGVLGLGLLA
/translation="MRREPDREVPRAGTEPVKDGGMVRTLSSFYGSMFMVFFGFTQCPAVC
GCSPARGLEFKYGKNMSNEILGRKFSLKDPQGNVRTLSSFYGSMFMVFFGFTQLFAVC
GTTLARAAQIKKLLRGRDRDLFQVVFITLDPERDTFSVLDAYVKAFDFTFTALTGTFE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /locus tagm PP2379"
/note="similar to GP:3298363, SP:P04127, GB:X02921,
SP:P02972, SP:P04740, GB:M68060, and GB:X03391; identified
by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /trānelation="medpamserelttllslmnqrqaclssackeiadwidrqgdvpa
agkiraslkaleadeaqvrktutsltldrplprprs"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /locus_tag="PP2380"
5100. .5582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tränslation="MSAITITDAAHDYLADLLSKQNTPGIGIRIFITQPGTQYAETCI
AYCKEGEKEPDTAUJKSFTAYLDAVSVEFLEDALVDYATDRWGGQLTIKAPNAKVP
MVNEDSFINERINYLJGEINFGLASHGGQVSLVDVVDDGIAVLQFGGGCQGCGQADV
TLKEGIERTLLERIFELKGVRDVTDHSQKENAYY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LHVMLMGLHNQVKEGDKVPLTLTIBDAKGAKETLEVQAQVRALNADAGGGHDHMHMNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="msmqpikrglaalvlmglalpalaqttvsdawvrasvphqqstg
afmvltassdsklvgvaspvaktvqvhemtmngdvmgmrevkaielpagkavtldpng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="conserved hypothetical protein"
/protein_id="AAN67993.1"
/db_xref="GI:24983936"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BIAAVAKEFKVFYEKVPAGDTYTISHSSTSYVYDTRGTLRLSLGHSLNAKECAEDLVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4428. .5099
                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /locus_tag="PP2382"
6229. .7533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="conserved domain protein"
/protein_id="AAN67994.1"
/db_xref="GI:24983937"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transI_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/transI_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="yhgI protein"
/protein_id="AAN67991.1"
/db_xref="GI:24983933"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence similarity,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               transI_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _tag="PP2379"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          putative"
                                                                          문
                                                                                                                                                 S
                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SdO
```

gene

gene

gg

gene

gg

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                         84751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                85051
                                                  84631
                                                                                                                                                        84691
                                                                                                                                                                                                                                                                                                                                                              84811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84931
                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   902;
                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGCCACC
                                                                                                                                                     GIGGIGGICGGCICGAIGCGICCGGGTACCGCCAIGICCGACGGCAIGCTCAACCIG
                                                                                                                                                                                                                                                         GATACCCTCGAAGAAACCGCCTTCTTCCTCAACCTGGTAGAGAAGACCGACAAGCCAATC
                                                                                                                                                                                                                                                                                                         GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC 360
                                                                                                                                                                                                                                                                                                                                                              CGCGTCGCCGAGCTGGCCGAAAGCAAGGACGTGGACGGCATCGTCATCACCCACGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                    AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAGAAGCCGAAACCCAACAGAAGCTGGCCAACGTGGTCATCCTCGCCACCGGCGGCACC
                                                                                                                                                                                      GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGGCCGACGGCATGCTCAACCTG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGTGATGCAGATCGCCTCCGAGAGCATCAGCAATGACGACCTGCTGAAGCTGGGCAAG 84812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACCTGCTCAAGCTGGCAAGC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGACAAGCTCATCGCCGGCGTGCCGGAACTGGCCGACATCGCCAATGTACGTGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGCCGGCGCCGGTGCCAGCGCTGCCAACAGCGCCACTTACCAGGCTGCCAAGCTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCGCCGGCGCTGGCGACCGCGGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC 120
                                                  TACAACGCCGTGGCCGTAGCCAGCGACAAGCAGTCGCGTGGCAAGGGCCGTGCTGGTGACC 84572
                                                                                                   TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="pp2383"
complement(7582..8427)
/locus_tag="pp2383"
/locus_tag="pp2383"
/note="identified by match
pp00165"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tranbl_table=11
/product="transcriptional regulator, AraC family"
/product="transcriptional regulator, AraC family"
/protein_id="AnA67996.1"
/db_xref="G1:24983939"
/translation="MSPPLREOTHLWQAPALGDVEMLHARYYQQRFAPHVHEGYVFTV
/translation="MSPPLREOTHLWQAPALGDVEMLHARYYQQRFAPHVHEGYVFTV
IESGAQRFWHRGSEHLAPVGSPLINDPELHTGATAHEAGWRYRGFYPEHERVTGVLD
ELELGRHGMFSEKDSYUHDPALALAPSQLHQLSEASASALQQQTAWFQAVLALVQRHD
ELECGRHGMFSEKDSYUHDPALALAPSQLADPPSLEALAAAVNLSPFHFARVFQATGLPP
HAWLKGRRLARAREMLKHGLAASQVAFDLGFADQSHLSRQFKQAYGVTPGAYRQACVH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement (8424. . .8738)
/locus tag="PP2384"
complement (8424. . .8738)
/locus tag="PP2384"
/note="identified by Glimmer2; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /locus_tag="PP2385"
complement(8735. .9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (8735. .9427)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="conserved hypothetical protein"
/protein id="AAN67997.1"
/protein id="AAN67997.1"
/db_xref="G1:2498940"
/translation="MTWILIFAMGAIVFLNRYAFLBPRLPLRLSSNARQFLGFAVPGM
/translation="MTWILIFAMGAIVFLNRYAFLBPRLPLRLSSNARQFLGFAVPGM
/translation="MTWILIFAMGAIVFLNRYAFLBPRLPLRSWLLSMLVSMLIFFLLRSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="azlC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene="azlC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          transl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 823.6; DB 1;
Pred. No. 7.8e-90;
D; Mismatches 109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .9427)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       by match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to PFAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      308015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          family HMM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                        84632
                                                                                                                                                                                                                                                         84692
                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                              84752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84992
```

```
JOURNAL
MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
AE004563/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                    TITLE
                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                       Stover, C.K., Pham, X.-Q.T., Erwin, A.L., Mizoguchi, S.D., Warrener, P., Hickey, M.J., Brinkman, F.S.L., Hufnagle, W.O., Kowalik, D.J., Lagrou, M., Garber, R.L., Goltry, L., Tolentino, E., Westbrock-Wadman, S., Yuan, Y., Brody, L.L., Coulter, S.N., Folger, K.R., Kas, A., Larbig, K., Lim, R.M., Smith, K.A., Spencer, D.H., Wong, G.K.-S., Wu, Z. and Paulsen, I.T.

Complete genome sequence of Pseudomonas aeruginosa PAO1, an opportunistic pathogen
Nature 406 (6799), 959-964 (2000)
3 BOX
              Direct Submission
Submitted (16-MAY-2000) Department of Medicine and Genetics,
University of Washington Genome Center, University Of Washington,
Box 352145, Seattle, WA 98195, USA
                                                                                           Stover.C.K., Pham,X.-Q.T., Erwin,A.L., Mizoguchi,S.D., Warrener,P., Hickey,M.J., Brinkman,F.S.L., Hufnagle,W.O., Kowalik,D.J., Lagrou,M., Garber,R.L., Goltry,L., Tolentino,E., Westbrock-Wadman,S., Yuan,Y., Brody,L.L., Coulter,S.N., Folger,K.R., Kas,A., Larbig,K., Lim,R.M., Smith,K.A., Spencer,D.H., Wong,G.K.-S., Wu,Z., Paulsen,I.T., Reizer,J., Saier,M.H., Hancock,R.E.W., Lory,S. and Olson,M.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pseudomonadaceae; P
1 (bases 1 to 9937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pseudomonas aeruginosa PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AE004563
                                                                                                                                                                                                                                                                           20437337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    eudomonas aeruginosa PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ĀE004563 AE004091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACTGGGTCGTGGCCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCGCATGTCAACCAGGGTGGTTTCGTACTGCGTAATGCCGAACAGCCGGATGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCACGT---CAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAACGACGAGATCCAGTCCGGCCGCGATGTGAGCAAGGCGGTCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGACCAAGACCCAGGACAGCAAAGAGCTGCAGCGGATCTTCTGGGGAGTACTGA 84038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACTGGGTCGTGGCTCACGACCTGAACCCCGCAAAAAAGCGCGGGATCCTGGCGATGGTAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGCGGGTAGTCCCGGCGCTGCAAGAACTGCGCAAGAACGGCGTGCAGATCATCCGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGTACCGGCAACGGTTCGGTATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGCCGCAGGTAGACATTGCGTATGGCTATGGCAACGTCACCGACACCGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTTCAAGAGCGCCTGGGGCCCCGATGGGCATGGTGGTGGAAGGCAAATCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCTTCAAGAGCGCCTGGGGCCCGGCTGGGCATGGTGGTAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                (bases 1 to 9937)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:9947274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9937
PAO1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    đq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      section 124 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
f 529 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ar BCT 19-FEB-2003 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84452
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
CONSRTM
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     accuracy of the protein name.

Class 1: Function experimentally demonstrated in P. aeruginosa.

Class 2: Function of highly similar gene experimentally
demonstrated in another organism (and gene context consistent
in terms of pathways its involved in, if known).

Class 3: Function proposed based on presence of conserved amino
acid motif, structural feature or limited sequence similarity
to an experimentally studied gene.

Class 4: Homologs of previously reported genes of unknown function,
or no similarity to any previously reported sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (04-FEB-2003) Department of Molecular Biology and Biochemistry, Simon Fraser University, 8888 University Dr., Burnaby, British Columbia V5A 186, Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This represents the February 3, 2003 version of the continually updated, reviewed, Pseudomonas aeruginosa PAO1 genome annotation, from PseudoCAP (see http://www.pseudomonas.com for latest updates and links to alternate annotations). PseudoCAP is coordinated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fiona S.L. Brinkman (Simon Fraser University, Canada) and Robert B.W. Hancock (University of British Columbia, Canada). We welcome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        submission through www.pseudomonas.com of any proposed changes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (1507. .3408)

/locus_tag="PA1336"

/note="Protein name confidence: Class 3 (function proposed based on presence of conserved amino acid motif, structural feature or limited sequence similarity to an experimentally studied gene); Subcellular localization: Inner membrane protein; Subcellular localization confidence: Class 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /locus_tag="PA1336"
complement(1507. .3408)
/locus_
/trānslation="mespdppcsvppsltvkprlvrqlllpiplllimlgfgyggyri
sesagirallaengerqleihartvessisktyvlpsllelersyshlltdptpyrrnq
vnayleglmraegsravylldtngrvlatswradpdsytleedlsfravqodawkgkpg
rfygigstrgepgyylahglvhggriigvavvkvkmdaleerwekarleafvsdengi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EHANGGTLFLDEIESMPVNLQIKLLRVLQEHTLERLGSNQSIPVDCRVIAATKADLAA
MGKSGQFRSDLYYRLNVVSLELPALRDRREDILLLFEHFLQQSSLRFDRPAFELDRAT
VASLMAHDWPGNYRELRNVAERFALGLPVFNKGGQAVQTGGPRFAEAVEAFEKALLGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="MIGCQQALELEDIPCIGVGSAEBALQRVDRDPAGIVVSDIRLPG
IDGL/TLLERLKALDPSLPVVLITGHGDISMAVQAMHAGAYDPMEKPFSPERLVEVARR
ALEGRGLAREVSALERQLAGRQDLAGRIIGRSPAIQALEELIAVVGDTSANVLILGET
GTGKELVARCLHDYSRRHQHAFVALNCGGLPENLFDSBIFGHEAHAFTGANKRRIGKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALARHHGNLTQASQDLGMAKTTLFDKVKKYGLQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="probable two-component response regulator"
/protein_id="AAG04724.1"
/db_xref="GI:9947275"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             strain="PAO1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₫
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Pseudomonas"
                                                                                                                   protein_id="AAG04725.1"
/db_xref="GI:9947276"
                                                                                                                                                                                                     codon_start=1/transl_table=11
                                                                                                                                                                            product="probable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .9937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _type="genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    confidence' is used to rate our confidence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Community Annotation Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA"
                                                                                                                                                                            two-component sensor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _aeruginosa PAO1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (PseudoCAP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of the
```

gene

89

```
/translation="MQPVLFRTLSLGVALAAASSSAFAATLDGGAVAAPDEYGAKVAA
QILKAGGNAVDAAVATAPTLAVTYPEAGNIGGGEFMTLYMDGKEYYFLDYREVAFKAAS
KTMYLDDKGEVIENLSLVGAKAAGVPGTWWGLMEAHKRFGKLPWSELLTPALGYAQKG
FKVADKQFQYRQDAVALFNGKTWFGDYFGHMKAGSAFLQFDLAKTLERIADKGPDEFY
KGHTADLLVAQMQQDKGLITHQDLADYKVRWREPMRVDWGGNTLYTAPLPSSGGIALA
QLLGIKENRAADFKGVELNSARYIHLLAEIEKRVFAADYLGDPDFSKVFVARLTDP
AYLKQRAAEVNEPTALSFTSKVRFGLEPHQTTHFSIVDADGNAVSNTYTLAWDFGGGTV
VKGRGFLLNDEMDDFSAKFGVANAFGVVGSDANAIEPGKRMLSSMSFSIVTRDGKVSL
VVGTPGGSRIFTSIFQVLNNIYDPHLPLEKAVAAQRVHHQLLFKDTIYXDAYAPLAGK
VABELKAMGYTLENGCMNMGDIQAIRVDGKALETASDPRGRGVGLVKF"
COMPLement (6429. .7163)
/locus_tag="PA138"
/locus_tag="PA138"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product-"glutaminase-asparaģinase"
/product-"glutaminase-asparaģinase"
/protein_id="AAG04726.l"
/protein_id="AAG04726.l"
/db_xref="GI:9947277"
/db_xref="GI:9947277"
/translation="MKPLLHAFAPGVMALMILLPQAAQAKEVAPQQKLSNVVILATGG
/translation="MKPLHHAFAPGVMALMILLPQAAQAKEVAPQQKLSNVVILATGG
/translation="MKPLHHAFAPGVMALMILLPQAAQAKEVAPQQKLSNVVILATGG
/translation="MKPLHHAFAPGVDLLASVPQLKDIANVRGQVPQIASESFTNENLLE
/GKTVAKLADSDDVDGIVITHCTDTLEETA YFLITLVBHTEKFI VVVVGSMRPGTAMSAD
GMLNLYNAVANGDKSARGKGVLITMNDĒILSGRDASKMVNIKTEAFKS PWGPLGMVV
/GKSYMFRAPVKHTVNSSFDIKQISALAPVBIAYSYGNVSDTAYKALAQAGAKAIIH
AGTGNGSVPARVVPTLQBLRKQGVQIIRSSHVNAGGFVLRNAEQPDDKNDWIVAHDLN
PQKARILAAVAMTKTQDSKELQRIFMBY"
    /protein_id="AAG04728.1"
/protein_id="AAG04728.1"
/db_xref="G1:9947279:
/tamelation="MISIKNVSKWYGDFQVLTDCSTEVAKGEVVVVCGPSGSGKSTLI
/tranelation="MISIKNVSKWYGDFQVLTDCSTEVAKGEVVVVVCGPSGSGKSTLI
KCVNALEPPQKGDIVVDGTSIADPKYMLPKLRSRVGWFQHFELPPHLSITENLTIAQ
IKVLGRSKEBATKKGLALLERVGLKSHAHKHPGQLSGGQQQRVAIARALAMDPVVMLF
DEPTSALDPEMVNEVLDVMVQLAHEGHTMMCVTHEMGFARKVANRVIFMDRGQIVEDC
                                                                                                                                                                                                                                             complement (6429. .7163)
/locus tage PAA1339 /
/locus tage PAA1339 /
/note Protein name confidence: Class 3 (function proposed /notes for conserved amino acid motif, structural feature or limited sequence similarity to an experimentally studied gene) //
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /notes Protein name confidence: Class 2 (high similarity to functionally studied protein); Subcellular localization: Periplasmic; Subcellular localization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to functionally studied protein) " /codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="synonym: pga"
complement(3504. .4592)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AWNERRKYLATRLAAREALQRANGELEVKIAERTADLQASNARLTAEIHERQQAEDTL
RKAQDELVQAGKLAVIQQMST51AHELNGPLAALRTLSGNTVRETLQRGKLETASTNLA
TINELVDRNGRITASIRAFARRSDDAGQASLAKAVDAALLILHGRLRODPFTLHRHFD
DVRLGIDQTRLEQILVNLLANALDAMSGQADRQLWLEGRREEERYVLRVRDNGPGIPP
EKBEFFGDVSARSERAQQFLAKILPH"
                                                                                                                                                         /product="probable
transporter"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="gamma-glutamyltranspeptidase precursor"
/protein_id="AAG04727.1"
/db_xref="GI:9947278"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     confidence: Class 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (4678. .6351)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="ggt"
/locus_tag="PA1338"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (4678. .6351)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /trans]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (3504. .4592)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AARVHLFEPFFTTKPGEHGLGLGLTLSASLATAAGGSLSVQHPESGGTAFELSLSLVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEQHPRGEAVTYLAQTRALNDTPWNLTLLSPLEDLRRDAVRNGMLAAIGFALLAFLLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="ggt"
/locus_tag="PA1338"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="ansB"
/locus_tag="!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                codon_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           I I LSGNPALKLKAVRSLGADDKERLARSMQYYWWALNEWQPLQRBPLAAGVEKLSFPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tag="PA1337"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        table=11
                                                                                                                                                                                                         table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            table=11
                                                                                                                                                                               ATP-binding
                                                                                                                                                                            component
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 (high
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           similarity
                                      문
                                                                          ð
                                                                                                                                 밁
                                                                                                                                                                       S
                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 850
                                           3857
                                                                                                                                   3917
                                                                                                                                                                                                                          3977
                                                                                                                                                                                                                                                                                                                     4037
                                                                                                                                                                                                                                                                                                                                                                                                                4097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4517
                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
```

Sg

gene

```
1 AAGGAAGTGGAGAACCAGCAGAAGGTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGACAAGCTGATTGCCGGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGGAAGTCGCACCGCAACAGAAACTGTCCAACGTGGTCATCCTGGCCACCGGCGCACC
CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCAACGGCAATGGCTCGGTGTCG 780
                                                                                                                           CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC 720
                                                                                                                                                                                                                                                                                                                                  GCGTTCAAGAGCCCGTGGGGCCCGCTGGGCATGGTGGTCGAGGGCAAGAGCTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                           GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCCATGGTGGTGGAAGGCCAAGTCGTACTGGTTC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGAACGACGAGATCCTCTCCGGCCGCGACGCGAGCAAGATGGTCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCGCCGGCCGGCCCAGCGCCCAACAGCGCCACCTACACCCGCCGAGGTGCCG
                                                             CTGGCTCCGGTGGAAATCGCCTACAGCTACGGCAACGTCAGCGACACCGCCTACAAGGCC 3798
                                                                                                                                                                                                CGCGCACCGGTGAAGCGGCACACGGTGAACTCCGAGTTCGACATCAAGCAGATCTCCGCG 3858
                                                                                                                                                                                                                                                             CGCCTGCCGGCCAAGCGCCACACGCTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACAACGCCGTGGCGGTGGCCGGCGACAAGTCGGCACGCGGCAAGGGCGTGCTGATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGGTGGTCGGCTCGATGCGCCCGGGCACCGCGATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACACCCTGGAAGAGACCGCCTACTTCCTGACCCTGGTCGAGCACACCGAGAAGCCTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGTGTTCCAGATCGCCTCGGAAAGCTTCACCAACGAGAACCTGCTGGAACTGGGCAAG 4278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCGACCAGTTGCTGGCCAGCGTGCCGCAGCTCAAGGACATCGCCAACGTCCGCGGCGAA 4338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCGCCGGCGCTGGCGCCAGCGCGACACAGCGCCACCTACCAGGCTGCCAAGGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCGTCGCCAAGCTGGCCGATAGCGACGACGTCGACGGCATCGTGATCACCCACGGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /locus_tag="PAi340"
/locus_tag="PAi340"
/note="Protein name confidence: Class 3 (function proposed based on presence of conserved amino acid motif, structural feature or limited sequence similarity to an experimentally studied gene); Subcellular localization: Inner membrane protein; Subcellular localization confidence: Class 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="mmdfsgivpalpsimegmimtikimvlgvlggvalgtvlalmri
shskilsniagfyvnyfrsichlogemegnefilegifiketilegaframtpillogs
mebayycetyragigaifkogmaaagalgmtyggymrlvlipgaframtpillogs
ilfqdtslvytvgimdfinsarsrgdiigganeflifagivyfvvsftasfavkrlqk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /locus_tag="PA1340" complement(7160. .7828)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transI_table=11
/product="probable permease
/protein_id="AAG04729.1"
/db_xref="GI:9947280"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (7160.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73.0%;
83.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 740.4; DB 1;
Pred. No. 1.5e-79;
D; Mismatches 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABC transporter"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 9937;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              u
T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                               3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                              3978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4458
```

```
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 4
AY659070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             음 중
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Snoon
                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                     SdC
                                                                                                                                                                                                                                           gource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                              Pharmacology, Harvard Institute of Proteomics, Harvard Institute of Proteomics, 320 Charles St., Cambridge, MA 02141, USA This clone is part of the Pseudomonas aeruginosa PAO1 ORF clone collection generated by the Harvard Institute of Proteomics. Each CDS has been PCR-amplified from genomic DNA. Initiation codon has been normalized to ATG and stop codon has been substituted for GGA to allow generation of C-terminal tagged proteins. AttB recombination sites have been added to either end of the orf and directionally cloned using the Gateway cloning system into pDONR 201. Additional sequences in the clone: 'GAAGGAGATACC' before the ATG' (corresponding to ribosomal binding site and Kozak consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AY659070
Synthetic construct F
PA1337 gene, partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   other sequences, artificial sequences.

1 (bases 1 to 1089)

Qiu,Q., Anumanthan,A., Mar,W., Zuo,D.,
Taycher,B., Halleck,A., Hainsworth,E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               synthetic construct synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qiu,Q., Anumanthan,A., Mar,W.,
Taycher,E., Halleck,A., Hainswo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY659070.1 GI:49086337
                                                                                                                                                                                                                                                                       sequences)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (15-JUN-2004) Biological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pseudomonas aeruginosa ORF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGACCAAGACCCAGGACAGCAAGGAGCTGCAACGGATCTTCTGGGAATACTGA 3504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACTGGATCGTCGCCCACGACCTGAACCCGCAGAAGGCGCGCATCCTGGCCGCGGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACTGGGTCGTGGCCCACGACCTGAACCCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAC---GTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGCGCGTGCTGCCGACCCTTGCAGGAACTGCGCAAGCAGGGCGTGCAGATCATCCGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGCCCAGGCGGCCAAGGCGATCATCCATGCCGGCACCGGCAACGGCTCGGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 1089)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submission
                                                                                   /codon_start=1
/transI_table=11
/product="PA1337"
/protein_id="AAT51345.1"
/db_xref="GI:49086338"
/db_xref="GI:49086338"
/translation="MKPLLHAFAPGVWALMLLLPQAAQAKEVAPQQKLSNVVILATGG
/translation="MKPLLHAFAPGVWALMLLLPQAAQAKEVAPQQKLSNVVILATGG
TIAGAGASAANSATYTAKVPVDQLLASVPQLKDIAVVRGEQVPQIASESFTYENLLE
LGKTVAKLADSDDVDGLVITHSTDTLEETAYFLTLVEHTEKPIVVVGSMRPGTAMSAD
GMLNLYNAVAVAGDKSARGKGVLITMNDEILSGRDASKMVNIKTEAFKSPWGFLGMVV
                                                                                                                                                                              /organism="synthetic cc
/mol_type="genomic DNA"
/db_xref="taxon:32630"
/clone="FLH038127.01F"
                                                                                                                                                 lab_host="Escherichia coli DH5alpha Tl resistant"
note="derived from Pseudomonas aeruginosa"
                                                                                                                                                                                                                                                          ocation/Qualifiers
                                                                                                                                      >1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1089 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mar, W., Zuo, D.,
Hainsworth, B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene repository
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Project.
                                                                                                                                                                                                               DNA"
                                                                                                                                                                                                                           construct"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chemistry and Molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Murthy, T.V.S., Hu, Y., Lory, S., LaBaer, J. an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lory, S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Murthy, T.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear SYN 07-JUL-2004
Lone FLH038127.01F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LaBaer,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .s.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      957
                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
               Ś
                                              문
                                                                     ঠ
                                                                                                       문
                                                                                                                                  S
                                                                                                                                                                밁
                                                                                                                                                                                        S
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         316
                    841
                                                                                                          796
                                                                                                                                                                  736
                                                                                                                                                                                               661
                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                        616
                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                   556
                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                          496
                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       136
                                                                          781
                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           849;
TCAC---GTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCGACCAAGAACA
```

```
1 AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTTGGCCACCGGCGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                               GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCCATGGTGGTGGAAGGCCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACACCCTGGAAGAAACCGCCTACTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCGCCGGCGCTGGCGCCAGCGGCCCAACAGACCGCCACCTACCAGGCTGCCAAGGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAACGACGACGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGGCGAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGTGGTCGGCTCGATGCGCCCGGGCACCGCGATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCGTGGTCGGTTCCATGCGCCCCCGGCACCGCCATGTCCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGACCAGTTGCTGGCCAGCGTGCCGCAGCTCAAGGACATCGCCAACGTCCGCGGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCGCCGGCGCGGCGAGCGCCGAACAGCGCCACCTACACCGCCGAAGGTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGAAGTCGCACCGCAACAGAAACTGTCCAACGTGGTCATCCTGGCCACCGGCGCACC
                                        CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                 CTGGCTCCGGTGGAAATCGCCTACAGCTACGGCAACGTCAGCGACACCGCCTACAAGGCC
                                                                                                                                                                                                                              CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                            CGCGCACCGGTGAAGCGGCACACGGTGAACTCCGAGTTCGACATCAAGCAGATCTCCGCG
                                                                                                                                                                                                                                                                                                                       CGCCTGCCGGCCAAGCGCCACACGCTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                    GCGTTCAAGAGCCCGTGGGCCCGCTGGGCATGGTGGTCGAGGGCAAGAGCTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAACGACGAGATCCTCTCCGGCCGCGACGCGAGCAAGATGGTCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACAACGCCGTGGCGGTGGCCGGCGACAAGTCGGCACGCGGCAAGGGCGTGCTGATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACACCCTGGAAGAGACCGCCTACTTCCTGACCCTGGTCGAGCACACCGAGAAGCCCTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCGTCGCCAAGCTGGCCGATAGCGACGACGTCGACGGCATCGTGATCACCCACAGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGTGTTCCAGATCGCCTCGGAAAGCTTCACCAACGAGAACCTGCTGGAACTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /replace="c"
: 1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /replace="g"
843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EGKSYMFRAPVKRHTVNSEFDIKQISALAPVEIAYSYGNVSDTAYKALAQAGAKAIIH
AGTGNGSVPARVVPTLQELRKQGVQIIRSSHVNAGGFVLRNAEQPDDKNDWIVAHDLN
PQKARILAAVAMTKTQDSKELQRIFWEYG"
370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /replace="t"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        72.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 738.8; DB 12;
Pred. No. 4.1e-79;
0; Mismatches 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ű,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                             840
                                                                                           855
                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                              735
                                                                                                                                                                                                                                                                                                                            660
                                                                                                                                                                                                                                                                                                                                                                         675
                                                                                                                                                                                                                                                                                                                                                                                                                    600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
915
                                                                                                                                                                                      795
```

	APOSCASS  APOSCASS  APOSCASS  PREMINTION  PREMINTION
121 GICGACAAGCTGATIGCCGGCGIGCCGGAGCTGGCCGACCTGGCCAATGIGCGCGGCGAG	Db 916 TCGCACGTCAATGCCGGCGGCTTCGTCCTGCGCAACGACGAGCAGCAGCAGCAAGAAC 975  Qy 898 GACTGGGTCGTGGCCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCA 957

REFERENCE

```
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SgC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Sim hes 720;
   361
                                   492
                                                                       301
                                                                                                         432
                                                                                                                                            241
                                                                                                                                                                                372
                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                      312
                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132
                                                                                                                                                                                                                                                                                                                             252
                                                                                                                                                                                                                                                                                                                                                                                                   192
                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hueser, A., Kloeppner, U. and Roehm, K.H. Cloning, sequence analysis, and expression of ansB from Pst fluorescens, encoding periplasmic glutaminase/asparaginase FEMS Microbiol. Lett. 178, 327-335 (1999)

2 (bases 1 to 2353)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (03-MAY-1999) Roehm K.H.,
Uni-Marburg, Karl-von-frisch-Str. 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Roehm, K.H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                      GATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAG
                                                                                                                                                                                                                    AGAAACCGCTTACTTCCTGAACCTTGTGGAAAAGACCGACAAGCCAATCATCGTCGTCGT
                                                                                                                                                                                                                                              AGAAAACCGCCTACTTTTTGAACCTCGTGGAAAAAGACCGACAAGCCGATCGTCGTGGTCGG
                                                                                                                                                                                                                                                                                                                      GCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCCGACACCCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                    GATTGCCGGCGTGCCGGAGCTGGCCAACCTGGCCAATGTGCGCGGCGAGCAAGGTGATGCA
                                                                       ĠĠĊŢĠŤĊĠĊĊĠĠĊĀĠĊĀĀĀĠĀĊĠĊŢĊĠĊĠĠĊĀĀĠĠĠŢĠŤĀĊŤĠĠŤĊĀĊĊĀŢĠĀĀĊĠĀŢĠĀ
                                                                                          GGCCGTGGCCAGCAACAAGGACTCGCGGCGAAGGGCGTGCTGGTGACCATGAACGACGA
                                                                                                                                                TTCAATGCGTCCTGGTACCGCCATGTCGGCTGACGGCATGCTCAACCTGTACAACGCCGT
                                                                                                                                                                   TTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGT
                                                                                                                                                                                                                                                                                         ACTOGCTGACAGCAAGGACGTGGACGGCATCGTTATCACCCACGGTACCGACACCCTCGA
                                                                                                                                                                                                                                                                                                                                                                   AATTGCGTCCGAGAGCATCAACAACGAAAACCTTCTGCAGTTGGGTCGCCGAGTAGCCGA
                                                                                                                                                                                                                                                                                                                                                                                                     GATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGA
 GATCCAATCGGGTCGCGACGTCAGCAAAATGATTAACATCAAGACCGAAGCATTCAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /COGON_BLATT=1
/trans[_table=11
/product=_matracellular endonuclease"
/protein_id="CAB44359.1"
/protein_id="CAB44359.1"
/db_xref="GI:5002698"
/db_xref="GI:5002698"
/db_xref="UniProt/Swiss-Prot:09WVZ1"
/db_xref="UniProt/Swiss-Prot:09WVZ1"
/translation="MSARFIAVAVRADASHGNTSSRPGRSGIEASAGKEVGAKTVRAT
TGCSGAPRRTCTTWCRASVRSMATVTTSVLDGCRCNVGKYGSCLTQUDEKAKKVMPRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="endx"
1385. .2014
/gene="endX"
/product="extracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="P4/10/3"
/cell_line="Lambda-ZAP
/clone_lib="PF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FVGPVNLKACG"
1328. .1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIRGMIARTYFYMSKQYGLRLSKQDRQLYEAWNKTYPVQPWERQRNQTVACVMGRGNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="endx"
/codon_start:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="endX"
1328. .2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1328. . 2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="genomic DNA"
/strain="ATCC13525"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         db_xref="taxon:294"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Pseudomonas"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60.2%;
81.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 610.4; DB 1
Pred. No. 6.8e-64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ехргевв"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fluorescens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      endonuclease"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Inst. f.
, D-35033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  physiol. Chemie,
Marburg/Lahn, GERMANY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ű.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            191
                                                                                                            491
                                                                                                                                                                                                                                                                                                                               311
                                                                                                                                                                                                                                                                                                                                                                   120
                                       551
                                                                         360
                                                                                                                                                300
                                                                                                                                                                                  431
                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                        371
                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                     251
                                                                                                                                                                                                                                                                                                                                                                                                                                          60
   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 7
CR543861 20
WPCOMMENT
Sequence split :
Fragment Name
CR543861 00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
CR543861 01 CR543861 00 CR543861 00 CR543861 00 CR543861 00 CR543861 10 CR543861 11 CR543861 11 CR543861 11 CR543861 11 CR543861 10 CR543861 20 CR543861 30 CR5438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Name
00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCGTGGGCCCGTTGGGCATGGTCGTTGAAGGCAAATCCTATTGGTTCCGCTTGCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCACACGACCTTAACCCACAGAAAGCCCGCATTCTGGCAATGGTTGCCCTGACCAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGGGCGTTTCGTGCTGCGTAACGCCGAGCAGCCGACGACGACAAGAACGACTGGGTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCCTGGCACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGGACAGCAAAGAATTGCAACGGATGTTCTGGGAATATTGAT 884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCCGGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCTGCCCTGCAGGAACTGCGCAAGCAAGGCGTGCAAATCATTCGCTCTTCCCCACGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAAATCGCCTACGGCTACGGCAACGTGAGCGACACCGCCGTCAAGGCCCCTGGCCCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGCGGCACACCATGGATTCCGAGTTCGACATCAAGACCATCAAAAGCCTGCCAGACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGTGCCAAAGCCATCATCCATGCCGGCACCGGCAATGGTTCGGTGTCTTCCAAAGTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            into
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36
   1800001
2000001
2100001
22000001
22000001
22000001
2400001
25000001
27000001
2800001
28000001
31000001
31000001
                                                                                                                                                                                                                                                                                             1300001
1400001
1500001
1600001
1700001
                                                                                                                                                                                                                                                                                                                                                                                    1000001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100001
200001
300001
400001
500001
600001
700001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Begin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCGTTCTGCGTAATGCTGAACAGCCTGACGACAAGTACGACTGGGTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fragments
                                                                                                                                                                                                                                                                        End
11000
210000
310000
410000
510000
510000
710000
810000
910000
1110000
1210000
1310000
1510000
1510000
1510000
1110000
1110000
                        3210000
                                                          3010000
                                                                                            2810000
                                                                                                                               2610000
2710000
                                                                                                                                                                 2410000
2510000
                                                                                                                                                                                                                      2010000
2110000
2210000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CR543861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CR543861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
```

S

片

맑

ð 밁 श्च 밁 8

문

S

문 र्

밁

밁 र्

```
F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CR543861_34
CR543861_35
Continuation 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 30.9%; Score 313; DB 1; Length 110000; Best Local Similarity 58.7%; Pred. No. 6.9e-29; Matches 582; Conservative 0; Mismatches 400; Indels 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             71599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31 AACGTGGTGATCCTGGCCACCGGCGGCACCATCGCCGGCGTGGCGCCAGCGGCCAAC 90
  GAGCTGCAGCGCATTTTCTGGGAATACTGAT 1012
                                                                                   AACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCCAGGACAGCAAG
                                                                                                                                                                                          GTGCTGCGTAACGCCGAGCAGCCCGACCAAGAACGACTGGGTCGTGGCCCACGACCTG
                                                                                                                                                                                                                                                             AAATTACATGATGAACAAGGGATTCAAATCATCCGCTCATCACGTGTACCGCAAGGTTTC
                                                                                                                                                                                                                                                                                                         TCCGAGTTCGACATCAAGCAGATCAGCAGC-----CTGCCCCAGGTGGACATCGCCTAC 684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCACCAAAGGAATCAACATCCATACCAATGCATTTGTAAGTCAATGGGGAGAACTCGGT 71718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGGCCCGCTGGGGC 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTGAC 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACAAG 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTTCGATGCGCCCCGGCACC 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTACTTTTTG 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAAAGATTTGGCCAATGTAAGCGGCATTCAAGCTTTACAAATCGCGTCTGAAAGTATT 71358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCCGGCGTGCCGGAG 150
                                                                                                                                                       GTATTGCGTAATGCCGAACAGCCTGATGATCAATATGGCTGGGTGGTTGCACATGATTTA
                                                                                                                                                                                                                                                                                                                                                                 ATTATCAATGCTGGTACAGGTAATGGCTCTGTAGGTAACTATATTGTGCCTACATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                               AGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCG 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTGAGTTTAÄTATTGÄAAATATCÄAAGGCGACCAACTTCCTCTCGTTCAAÄTCGTATÄT 71836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGCTGGTTGAAGGTAAACCTTACTGGTTTAGAAGCTCAGTCAAACGCCATACCAATGCG 71778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGTGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCAAC 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGCAAAAAATAAAGGCGTGATGGTATTGATGAATGATTCAATCTTTGCAGCACGTGAT 71658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCACTTTCAGCAGATGGCCCACTTAACCTTTATAGTGCGGTTGCGCTTGCTGCTTCAGAT 71598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTGACAAAGAATTATTATCTCTTGCCCGCCAAGTTAATGATCTTGTTAAAAAAACCATCT 71418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGAC 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCATC 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTGCAACCTATACTGCAGCAAAAGTACCAGTCGATGCACTGATCAATGCAGTACCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACGTCGTTGTAGTCGCAACAGGTGGAACAATTGCCGGTGCCGGTGCCAGCTCGACCAAC
                                                   AATCCACAAAAAGCACGTCTGCTTGCTGTTTAGCACTGACAAAAACCAATGATGCCAAA 72138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3400001 3510000
3500001 3598621
of 36) of CR543861 from base 2000001 (CR543861 Acinetobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                  804
                                                                                                      981
                                                                                                                                                                                                                                                                                                              861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71238
                                                                                                                                                         72078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BX571965_32
BX571965_34
BX571965_34
BX571965_36
BX571965_36
BX571965_38
BX571965_38
BX571965_38
BX571965_40
Continuation 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
BX571965
                                           문
                                                                                              S
                                                                                                                                                 밁
                                                                                                                                                                                          S
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                               밁
S
                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence split into 4
Fragment Name
BX571965 00
BX571965 02
BX571965 03
BX571965 04
BX571965 06
BX571965 06
BX571965 07
BX571965 07
BX571965 09
BX571965 10
BX571965 11
BX571965 11
BX571965 11
BX571965 12
BX571965 12
BX571965 13
BX571965 14
BX571965 14
BX571965 14
BX571965 16
BX571965 17
BX571965 17
BX571965 17
BX571965 17
BX571965 17
BX571965 18
BX571965 18
BX571965 19
BX571965 20
BX571965 22
BX571965 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPCOMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 545; Conserv
                                                                                                                                                                                                                                                                                                                                                                 83770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16
                                                                                                                                                                                                                                                                                                              84
                                                                                                                                                                                                                                                                                                                                                                                                                  24
                                                                                                                                                                                                                                                           CGCGCAGACGGCCGCTACCAGGCGGCGCCCTCGGCGTCGACAGGCTGCTCGCCGCCGT
                                                                                                                                                                                                                                                                                           GGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAATCCAGCGTATGTTCTGGCAATATTAAT
CAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTA 323
                                                   GGACTTGTCGCCCGCGCTGTGGACGACGCTCGCCGAGCGGATCGACGCGCTTGCCGGCGAA 84009
                                                                                                                                                                                                                                                                                                                                                            geriggecaacergergarieereseceaceseceaceareareseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceacesecaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceaceseceacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecacesecaces
                                                                                                   AAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAG
                                                                                                                                                         GCCCGCGCTCGCGCAGATCGCGACGATCGAGGCCGAGCAGCGTCGCGAGCATCGACAGCAA
                                                                                                                                                                                          GCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGGGGAGCAGGTGATGCAGATCGCCTCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 41)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41 fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3400001
3500001
3600001
3700001
3800001
3900001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30000001
3100001
3200001
3300001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2600001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2400001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1400001
1500001
1600001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1200001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1000001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4000001 407
of BX571965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           290000:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             200000:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      190000:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180000:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100001
200001
300001
400001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Begin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3810000
3910000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3510000
3610000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2010000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1310000
1410000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1110000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1510000
1610000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4010000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3710000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3410000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3110000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3010000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2910000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2810000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2710000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2610000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 283.2; DB 1;
Pred. No. 2.5e-25;
0; Mismatches 388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3210000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1010000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               710000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   210000
310000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 910000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   510000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Focus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       base 1600001 (BX571965 Burkholderia pseudomalle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BX571965 Accession BX571965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 110000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                          203
                                                                                                                                                                                                                                                                                                              143
                                                                                                                                                         83949
                                                                                                                                                                                                                                                           83889
                                                                                                                                                                                                                                                                                                                                                                 83829
                                                                                                                                                                                                                                                                                                                                                                                                                  83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
```

ई

ঠ

밁

ঠ 몽

밁

S 밁 ঠ ई 문 ð

밁

र्

문 र् 밁 र् 밁 ঠ 밁 8 B र्श 용 8 문 ঠ

문

ATCC

```
RESULT 9
CP000010 14/c
WPCOMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          & B & B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence split
Fragment Name (CP000010 03 CP000010 05 CP000010 05 CP000010 07 CP000010 10 CP000010 11 CP000010 11 CP000010 13 CP000010 14 CP000010 15 CP000010 16 CP0000010 16 CP00000010 16 CP00000010 16 CP0000010 16 CP0000010 16 CP0000010 16 CP0000010 16 CP00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGTGCTGCGTAACGCCGAGGACCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACGCTCGACTCGCGCTTCGCGATC-----GGCGCCGCCTGGCCGAGGTCGAGGTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGCGACGTCGTGAAGACGAGCACCTATGCGGTCGATGCATTTCACTCGCCCGAACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAACAAGGACTCGCGGCCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGACGCGATCGACGGCATCGTGATCACGCACCGCACACGCTCGAAGAGACCGCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGGCTCGTCGTCGCGGGCACGGGCAACGGCTCGATCCATGCGGCGCGCTGCAGGCGGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTT---CAAGAGCGCCTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCGACCGCGCTGTCGTCGACGGCCCGCTCAACCTGCTGAACGCGGTCGCCGTCGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ccrecrecarcreaccereaadacceceaadeccrercereareaceeceecearececc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTGATGCGCAACGGGGGGGGAACGACGATGCGCTCGGCTTCGTGAGCGCGGGTTCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCCGATGCGGCGGCGAAGGGCGTCGCGATCGTGCGCGCGTCGCGCGTCGGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            into
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            36
100001
200001
300001
400001
500001
600001
700001
800001
1000001
11000001
1200001
1300001
1400001
1500001
1600001
1600001
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Begin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fragments
End
110000
210000
310000
410000
510000
610000
610000
910000
910000
1110000
1210000
1310000
1310000
1510000
1510000
1510000
1510000
1510000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CP000010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CP000010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                  δ
                                                                                                                                                                  밁
                                                                                                                                                                                                            8 유
                                                                                                                                                                                                                                                                                                    중 유
                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                           당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Continuation
    밁
                                                                                          밁
                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 27.8%;
Best Local Similarity 57.7%;
Matches 544; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CP000010 20
CP000010 22
CP000010 23
CP000010 24
CP000010 26
CP000010 26
CP000010 27
CP000010 29
CP000010 31
CP000010 31
CP000010 33
CP000010 35
CP000010 35
CP000010 35
CP000010 35
CP000010 35
                                                                                                                                                                                                                                                                         68649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCCAACAGCCCACCTACCAGGCTGCCAAGGTTGGCGACAAGCTGATTGCCGGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCGCCAGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        deride ceceda redecer e en cerce de acede de care de cece de c
                                                                                                                                                                                                                                                                                                         CCCGCTGGGCATGGTGGAGGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCA
                                                                                                                                                                                                                                                                                                                                                                                             GCGTGACGTGAGCAAGTCGATCAAGACCGAAGCCTT---CAAGAGCGCCTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTGCTGCATCTGAACCGTGAAGACCGCGAAGCCTGTCGTGATGACGGCGGCGATGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGACGCGATCGACGGCATCGTGATCACGCACGCGCACCGCTCGAAGAGACCGCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAATGACGTCGATGGCATCGTCATCACCCATGGCACCCGACACCCCTGGAAGAAACCGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAG
                                              GECECTGATCCATECCECCACCECCAATECCTCGCTGTCGCCGGCTGGTGCCAGCCCT
                                                                                                                        CTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAA
                                                                                                                                                                                     TACGCTCGACTCGCGCTTCGCGATC----
                                                                                                                                                                                                       CACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGC
                                                                                                                                                                                                                                                                           ĠĊĠĊĠĂĊĠŤĊĠŦĠĂĂĠĂĊĠĂĠĊĂĊĊŦAŦĠĊĠŦĊĠĂŦĠĊĂŤŤŦĊĂĊŦĊĞĊĊĠĂĂĊŦĠĠĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGACTTGTCGCCCCGCGCTGTGGACGACGCTCGCCGAGCGGATCGACGCGCTTGCCGGCGAA
                                                                                            CGCGAGCTÁTGCGGGCGCATCGCGCGTGATCGTCGÁTGCATGCGTCGCGGCGGGGGGCGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ģ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000001 2110000
2100001 2210000
2200001 2310000
2300001 2510000
2500001 2610000
2600001 2710000
2600001 2710000
2700001 2910000
2800001 3010000
2900001 3110000
3100001 3210000
3100001 3310000
3100001 3510000
3500001 3510148
6) of CP000010 from k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 281.6; DB 1;
Pred. No. 3.8e-25;
0; Mismatches 389;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         base
                                                                                                                                                                                       -GGCGCCGCCTGGCCGCAGGTCGAGGTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1400001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CP000010 Burkholderia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                   680
                                                                                                                                                                                                                                                                                                                                                                                                               560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68770
                                                                                                                                                                                       68536
                                                                                                                                                                                                                                                                                                                                                                      68650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    69070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 69010
           68416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mallei
```

밁 ঠ 밁 ई 문 ð

```
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
JOURNAL
                                           RESULT 11
AR319786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
A27539
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PBATURBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                          Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68415
                                                                                                                                                                  181
                                                                                                                                                                                                                               121
                                                                                                                                    241
                                                                                                                                                                                               181
                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    861
                                                                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                            287,
 AR319786
Sequence
AR319786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria, Proteobacteria.
1 (bases 1 to 300)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pseudomonas sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pseudomonas
A27539
                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A27539.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A27539
                                                                                                                            AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCCATGGCAC
                                                                                                                                                                                                                                                           GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                                                         ATCGCCGGCGCTGGCGCCAGCGCGGCCAACAGGCGCCACCAGCCTGCCAAGGTTTGGC
                                                                                                                                                                                                                                                                                                                                                                  AAGGAAGTGGAGAACCAGCAGAAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC
                                                                                                                                                                CAGGTGATGCAGATCGCTCNNGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                            CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                           GTCGACAAGCTGATTGCCGGCGTGCGCGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                                                                                                AAGGAAGTGGAGAACCAGCAGAAGCTCGCCAACGTTGTGATCCTGGCCACCGGCGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAATCCGTACAAGGCGCGCGCGCTGCTGATGCTCGCGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGAC 962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTGATGCGCAACGGGCGAACGACGATGCGCTCGGCTTCGTGAGCGCGGGTTCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGCCGATGCGGCGAAGGGCGTCGCGATCGTGCGCGCGTCGCGCTCGGCTCGGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCT
                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DE 4140003-A 1 09-JUN-1993;
Location/Qualifiers
                 2336 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/transl_table=11
/product="7A-Glutaminase"
/protein_id="CAA01881.1"
/protein_id="CAA01881.1"
/db_xref="GI:1247713"
/translation="KEVENQKLANYVILATGGTIAGAGASAANSATYQAAKYGVDKL
/translation="KEVENQKLANYVILATGGTIAGAGASAANSATYQAAKYGVDKL
IAGVRELADLANVRGEQVMQIAXESITNDDLLKLASSVAELADSNDVDGIVITHGT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /mol_type="unassigned
/strain="ATCC 29598"
/db_xref="taxon:306"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300 bp DNA
7A glutaminase gene N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . >300
                                                                                                                                                                                                                                                                                                                                                                                                                          27.7%;
96.0%;
            1125
patent US
                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                        Score 281; DB 6
Pred. No. 2e-24;
                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
               6562958.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                            12;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 300
                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAT
                               PAT 17-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20-SEP-1995
                                                                                                                                    299
                                                                                                                                                                                              240
                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 920
                                                                                                                                                                  240
                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
S
                       문
                                                      S
                                                                                     문
                                                                                                             5
                                                                                                                                         문
                                                                                                                                                                         ঠ
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                र्
                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         315
   804
                               855
                                                           744
                                                                                                                      684
                                                                                                                                                  735
                                                                                                                                                                                630
                                                                                                                                                                                                             675
                                                                                                                                                                                                                                         570
                                                                                                                                                                                                                                                                         615
                                                                                                                                                                                                                                                                                                   510
                                                                                                                                                                                                                                                                                                                                  555
                                                                                                                                                                                                                                                                                                                                                              450
                                                                                                                                                                                                                                                                                                                                                                                              495
                                                                                                                                                                                                                                                                                                                                                                                                                                                       435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 375
                                                                                                                                                                                                                                                                                                                                                                                                                          390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30 CAACGTGGTGATCCTGGCCACCGGCGGCGCACCATCGCCGGCGCTGGCGGCCAGCGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 1125)
Breton,G. and Bush,D.
Nucleic acid and amino acid sequences relating baumannii for diagnostics and therapeutics Patent: US 6562958-A 2336 13-MAY-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AR319786.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                            CGCCATGTCCGCCGACGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCCGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTCAAGATTTGGCGAATGTATCTGGTATCCAAGCATTACAAGTAGCTTCTGAAAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGCGCCACCTACCAGGCTGCCAAGGTTGGCCGACAAGCTGATTGCCGGCGTGCCGGA
 GATTATTCATGCAGGTÁCAGGTÁÁTGGTTCTGTAGCGAAATATATCGTTCCAACATTACA
                                              GCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCCCTGCA
                                                                                        TGGTTCTGACTCTATGCTTCCTGATGCTTATGAAGCATATGCAAAAGCTGGCGCTAAAAGC
                                                                                                                 CAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGC
                                                                                                                                                  TTCAGAATTTAATATTGAAAATATTAAAGGTGATGCTCTTCCGACAGTACAAATCGTTTA
                                                                                                                                                                              CTCCGAGTTCGACATCAAGCAGATCAGCAGC-----CTGCCCCAGGTGGACATCGCCTA
                                                                                                                                                                                                             TACACTTGTTGAAGGCAAACCATATTGGTTTAGACAATCTGTTAAAACGTCATACCAATGC
                                                                                                                                                                                                                                         CATGGTGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCAA
                                                                                                                                                                                                                                                                       TGTAACTAAAGGCATTAACATTCATACAAATGCTTTTGTAAGCCAATGGGGTGCTTTGGG
                                                                                                                                                                                                                                                                                                   CGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGGCCCGCTGGG
                                                                                                                                                                                                                                                                                                                                                              GGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATCTTGTTGTTCATACTGATAAACCAATCGTACTTGTTGGCTCAATGCGCCCATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTCGATGGCATCGTCATCACCCATGGCACCGACACACCCTGGAAGAAACCGCCTACTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACTGACAAGGAATTATTACAAATTGCTCGTCAAGTAAATGAACTTGTTAAAAAAGCCAAC 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGACGCCGACAGCAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTGGCCGACCTGGCCAATGTGCGCGCGAGCAGCTGATGCAGATCGCCTCCGAAAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGTGCAACTTATACGGCGGCAAAAGTTCCAGTTGATGCTTTAATCAATGCAGTTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAATGITGITGITGICGCTACTGGCGGTACCATTGCTGGTGCTGGCGCAAGCTCAGCAAA
                                                                                                                                                                                                                                                                                                                                 TGATGCAAAAATAAAGGCGTTATGGTTCTCATGAACGACTCTATTTTTGCTGCTCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTAAATGGCGTTGTGATTACACACGGTACAGATACTTTAGAAGAAACAGCATTTTTCTT
                                                                                                                                                                                                                                                                                                                                                                                          TGCTCTTTCAGCAGATGGTCCACTTAACCTTTATAGTGCTGTTGCATTGGCCGCTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="unknown"
/mol_type="genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GI:33700889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 273; DB 6;
Pred. No. 1.3e-23;
0; Mismatches 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Acinetobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             149
   960
                                                                                                                                                                                                                                           629
                                                                                                                                                                                                                                                                                                     569
                                                                                                                                                                                                                                                                                                                                                                                                                        449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           194
                               914
                                                           803
                                                                                        854
                                                                                                                                                  794
                                                                                                                                                                                                                                                                       674
                                                                                                                                                                                                                                                                                                                                  614
                                                                                                                                                                                                                                                                                                                                                              509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                254
                                                                                                                                                                                                             734
                                                                                                                                                                                                                                                                                                                                                                                            554
                                                                                                                                                                                                                                                                                                                                                                                                                                                       494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269
```

S 밁 ક 문 ş 밁 8

ક 밁

S

뭉

중 유

ঠ

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
ECASN
LOCUS
                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                     Matches
                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 981
                     557;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      asn gene; hydrolase; L-asparagine aminohydrolase
Erwinia chrysanthemi (Pectobacterium chrysanthem
Erwinia chrysanthemi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (31-AUG-1988) Filpula D., Industrial Drive, Gaithersburg, MD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Filpula, D., Nagle, J.W., Pul
Sequence of L-asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Pectobacterium,
1 (bases 1 to 1399)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Erwinia chrysanthemi asn gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89057497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X12746.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Filpula, D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic Acids Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X12746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       194219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAATTCAACGCATGTTCTGGCAGTACTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGCTGCAGCGCATTTTCTGGGAATACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAACCTTCATGACAAAAACGGTATTCAAATTATCCGCTCATCGCGCGTTCCACAAGGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTATTACGTGATGCAGAACAACCTGACTCTAAATATGGTTGGGTAGCAGCTCATGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAATCCTCAAAAAGCGCGTCTTCTTGCGGCGTTGGCACTTACCAAAACCAACGATGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 1399)
                     Conservative
                                                                                                                                      /product="put. L-asparagine aminohydrolase precursor"
/protesin_id="CA31239.1"
/protesin_id="CA31239.1"
/db_xref="G1:40994"
/d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="inverted repeat
123. .129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Erwinia chrysanthemi"
/mol_type="genomic DNA"
/strain="NCPPB1125"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                     rsdpkviqeyfhty"
                                                                                                                                                                                                                                                                                                                                                                     transl
                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="pot. ribosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:556"
|09. .115
                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="inverted repeat A'"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 1399
                                    26.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        .214
                                                                                                                                                                                                                                                                                                                                                                     _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16 (21), 10385 (1988)
                   0,
                 Score 266.4; DB 1
Pred. No. 7.5e-23;
0; Mismatches 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pulford, S. an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bp DNA linear becarae e for L-asparagine aminohydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                   binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and Anderson,D.
om Erwinia chrys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genex Corporation, 20877, USA
                                                         DB 1;
                     421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              chrysanthemi)
                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        chrysanthemi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3
                                                              1399;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BCT
                     18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31-MAR-1995
                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCPPB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (B)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          974
                   2;
RESULT 13
AY560098
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                         문
                                                                                                                                                     5
                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                        1130
                                                                                                                                                                                                                                                                                                                                                                         1070
                                                                                                                                                                                                           1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1010
                                                                                                                                                                                                                                                 917
                                                                                                                                                                                                                                                                                                                                                                                                                797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      410 CTGTGCCTGAGGTGAAGAAACTGGCTAATGTGAAGGGGGAGCAGTTCTCCAACATGGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
  AY560098
Erwinia c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATAAACTGCCCAATATCGTTATCCTGGCGACCGGCGGTACTATTGCCGGCTCAGCGGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGCGGCCAACAGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACCATCGCCGGCGCGCTGGCGCCA
                                                                                                                            CGAAAGTCATTCAAGAGTATTTCCATACTTATTGAT 1270
                                                                                                                                                                                                                                    ACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACA
                                                                                                                                                                                                                                                                                                                                                                         GCATGCGCAAGGCGCTGGAAAAAGGCGTTGTTGTGATGCGTTCTACTCGCACAGGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGCTACCTGGGCGTTATCATCGGTAACCGCATTTACTACCAAAACCGTATCGACAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGGGCGTGACGTGAGCAACATCAACATCAAGACCGAAGCCTTC---AAGAGCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACGGGATGATGTGGATGGTGGTGATCACCCACGGTACCGACACTGTGGAAGAGTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGAAAGCATCACCAACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGGTACCCAAACCACGGGTTACAAGGCTGGCGCGCTTGGCGTGGATACGCTAATCAACG
                                                                                                                                                              GCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGAT 1012
                                                                                                                                                                                                         CTCTTAACCCGGCACATGCTCGCATTCTGTTGATGCTGGCATTGACTCGCACCAGTGATC
                                                                                                                                                                                                                                                                                        GTATTGTGCCGCCGGATGAAGAGCTGCCAG-
                                                                                                                                                                                                                                                                                                                        GTTTCGTGCTGACGCCGAGCAGCACCACGACGACGACGACTGGGTCGTGGCCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                TAAAAGGTATCGTCTATGCCGGTATGGGCGCGGGTTCAGTGTCGGTTCGTGGTATTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCTTTATGGCTATCAGGATGACCCGGAATATCTGTATGACGCGGCTATCCAGCATGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGCCTACAGCTATGGCAACGTCACCGACACGCCCTACAAGGCCCCTGGCACAGAACGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCATACCACCCGGTCGGTGTTCGACGTGCGTGGCCTGACTTCGCTGCCGAAAGTCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCCCGCTACATCACCAAGACCAACGCCTCTACGCTGGATACGTTCCCGGGCGAATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGGTGATAAGCAGTCTCGCGGTCGTGGCGTGATGGTGGTGATCAATGATCGTATCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ĠŦĊĊĠĠĊŖĂĊĠĠĊĊŔŤĊŖĠĊĠĊŦĠŔĊĠĠĊĊĊĠŔŤĠŔĸĊĊŦĠĊŦĠĠŔŔĠĊĠĠŦŖĊĠĊĠŦĠĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTACTTTCTTCATCTGACGGTAAAAAGTGACAAGCCGGTGGTGTTTGTCGCAGCGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chrysanthemi
1047 bp I
L-asparaginase
                     DNA
  precursor
                       linear
    gene,
                                                                                                                                                                                                                                                                                            GTCTGGTTTCTGACT
  complete
                         BCT 22-MAR-2004
    cds
                                                                                                                                                                                                               1234
                                                                                                                                                                                                                                                                                            1174
                                                                                                                                                                                                                                                                                                                                                                             1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           349
                                                                                                                                                                                                                                                        976
                                                                                                                                                                                                                                                                                                                                     916
                                                                                                                                                                                                                                                                                                                                                                                                                    856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    79
```

547

```
र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                            S
                                                                                                                                         유 &
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                          380
                                                               368
                                                                                                                                           308
                                                                                                                                                                                  260
                                                                                                                                                                                                                         248
                                                                                                                                                                                                                                                                                                   188
                                                                                                                                                                                                                                                                                                                                          140
                                                                                                                                                                                                                                                                                                                                                                                 128
                                                                                                    320
                                                                                                                                                                                                                                                                                                                                                                                                                                                             68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           556;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (26-FEB-2004) Agricultural Biotechnology, University of Athens, 75 Iera Odos, Athens 118 55, Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cloning, expression and cl
Erwinia chrysanthemi 3937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kotzia, G.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 (bases 1 to 1047)
Kotzia, G.A. and Labrou, N.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Enterobacteriaceae; Pectobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria, Proteobacteria, Gammaproteobacteria, Enterobacteriales,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brwinia chrysanthemi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Erwinia chrysanthemi (Pectobacterium chrysanthemi)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY560098.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jnpublished
GCCCCGGCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGG
                                                                                                                                                                                                                                                            CCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCG
                                                                                                                                                                                                                                                                                                                                        GCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGAGCAGGTGATGCAGATCGCCT 199
                                                                                                                                                                                                                                                                                                                                                                                                          GCGCGGCCAACAGCCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGGGGCACCATCGCCGGCGGCGCTGGCGCCA
                                                                                                                                         CGCGTGACGATGTGGACGGCGTGGTGATTACCCCACGGTACGGACACGCTGGAGGAGTCGG
                                                                                                                                                                                  ACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCG
                                                                                                                                                                                                                       GCGAAAAACATGACCGGCGATGTGGTGCTGAAACTGAGCCAGCGCGTGAATGCGCTGCTGG
                                                                                                                                                                                                                                                                                                   CCGTGCCCGAGGTGAAAAAACTGGCTAACGTAAAAGGCGAGCAATTCGCCAACATGGCCA
                                                                                                                                                                                                                                                                                                                                                                               CGGGTACCCAGACTACCGGTTACAAGGCCGGCGCGCTTGGCGTGGATACGCTGATCAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATAAGCTGCCAAACATCGTCATTCTGGCGACCGGCGGTACTATTGCCGGCTCGGCGGCGA
                                                               cciartrcciccaccigaccigaaaaaccaacaaccciggradigritrigccigccaarigc
                                                                                                    CCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 1047)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="merwfkslp1 iapppistanaadklpnivilatggtiagsaatg tottop:"ikkvpkykklanvkgegpanmasenmygdvvlklsgkvnall arddvogvvlthigtdtilbavpkykklanvkgegpanmasenmygdvvlklsgkvnalllanv rvadvogvvithigtdtilbsayethityksdkpvvpaamrpataisladgpmxillbav rvasdkgskgrgvlvvlandigsayyitksnastlbsgpranbegylgvvighhityygn rldklhyksgrygdvralshepkydpityygngsgkyldarishgvkgjvyagmgagsv svrgiagmkaqdkgvvvmrssrtgngivppdbalpgivadslnpaharillmialtr tsdpaviodyffty"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="L-asparaginase precursor"
/protein_id="AAS67028.1"
/db_xref="GI:45505307"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="L-asparaginase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      trans]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="L-asparagine aminohydrolase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            organism="Brwinia chrysanthemi"
|mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            function="catalyzes the hydrolysis,-aspartic acid and ammonia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     db_xref="taxon:556"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:45505306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and Labrou, N.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 265.4; DB 1;
Pred. No. 1.1e-22;
0; Mismatches 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of L-asparaginase from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  읁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L-asparagine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Greece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Agricultural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ៥
                                                                                                    379
                                                                                                                                                                                                                                                                                                                                                                                                                                                           127
                                                             427
                                                                                                                                                                                                                       307
                                                                                                                                                                                                                                                            259
                                                                                                                                                                                                                                                                                                   247
                                                                                                                                                                                                                                                                                                                                                                               187
    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 14
BX640423
                                                                                                                                                                                                                                                                                                                                        RBFBRENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                             JOURNAL
                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            917 ACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACA 976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          428 GCCCGGCCACGGCCATTAGCGCCGACGGCCCGATGAACCTGCTGGAAGCGGTTCGCGTGG 487
                                                                                        Parkhill, J., Sebaihia, M., Preston, A., Murphy, L.D., Thomson, N., Harris, D.E., Holden, M.T.G., Churcher, C.R., Bentley, S.D., Mungall, K.L., Cerdeno-Tarraga, A.M., Temple, L., James, K., Harris, B., Quail, M.A., Achtman, M., Atkin, R., Baker, S., Basham, D., Bason, N., Cherevach, I., Chillingworth, T., Collins, M., Cronin, A., Davis, P., Doggett, J., Feltwell, T., Goble, A., Hamlin, M., Hauser, H., Holroyd, S., Jagels, K., Leather, S., Moule, S., Norberczak, H., O'Neil, S., Ormond, D., Price, C., Rabbinowitsch, E., Rutter, S., Standers, M., Squares, R., Squares, S., Stevens, K., Umvin, L., Whitehead, S., Barrell, B.G. and Maskell, D.J.
                                                                                                                                                                                                                                                                                                                                                                       Bordetella parapertussis
Bordetella parapertussis
Bacteria; Proteobacteria; Betaproteobacteria; Burkholderiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bordetella parapertussis strain 1/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                      complete genome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           BX640423.1 GI:33564799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BX640423 BX470249
                                                                              pertussis, Bordetella parapertussis and Bordetella bronchiseptica
                                                                                                                                                                                                                                                                                                                                                           Alcaligenaceae; Bordetella.
                                                         Inpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAATGCGCAAGGCGCAGGATAAAGGCGTGGTGGTGATGCGCTCTTCCCCGCACCGGCAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGCGGTGATCCAGGACTATTTCCACACCTATTGA 1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCTCAACCCGGCGCATGCCCGAATCCTGTTGATGCTGGCATTGACCCCGCACCAGCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GITTICGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACG 916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGTTATCTGGGCGTGGTGATCGGTAACCATATCTATTACCAGAATCGCCTCGACAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCATCGTGCCGCCGGATGAAGCGCTGCCGGGCC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAAGGCGCTGATCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGT 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCTTTATGGGTATCAAGATGACTCGGAATACCTGTACGACGCCGCCATCAGCCACGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAA---GAGCGCCT 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAGCGACAAACAGTCTCGCGGCGCGCGCGTGCTGGTAGTGCTCAACGACCGTATCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGCCCGTTATATCACCAAGAGCAATGCCTCGACGCTGGACAGTTTCCGGGCGAATGAAG
                                           (bases
                                         1 to 348251)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       348251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
12822,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complete genome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
```

TGGTCGCGGATT

907

847

787

727 676 667

1012

BCT 06-MAY-2004 segment

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (06-AUG-2003) Submitted on behalf of the Pathogen Sequencing Unit, Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 18A, E-mail: ms5@eanger.ac.uk
                                                                                                                                                                                                                                                                                                                                                                                                       /locus_tag="BPP0002"
/notes=fortholog of Bordetella pertussis (BX470248) BP0002
/notes=fortholog of Bordetella pertussis (BX470248) BP0002
Similar to Pseudomonas putida glucose inhibited division
protein B GidB SWALL:GIDB_PSEPU (SWALL:P25757) (216 aa)
fasta scores: E(): 1.5e-24, 42.59% id in 216 aa, and to
Escherichia coli glucose inhibited division protein B GidB
or B3740 or Z5240 or Ecs4682 SWALL:GIDB ECOLI
(SWALL:P17113) (207 aa) fasta scores: E(): 1.6e-12, 39% id
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein A
820. .864
                                                                                                                 /codon_start=1
/trans1_table=11
/product="glucose inhibited division protein B"
/protein_id="CAB39743.1"
/protein_id="CAB39743.1"
/db_xref="GI:33564801"
/db_xref="GI:33564801"
/db_xref="MIPROTE/TEMBL:Q7W2IO"
/translation="MSAVPDIPGGPAQRLAQACDALRLPADAGQQQKLLRYIEQMQRW/translation="MSAVPDIPGGPAQRLAQACDALRLPADAGGQQKLLRYIEQMQRW/translation="MSAVPDIPGBSCSTARVKLPDVGSGGGLPGVV
NRTYNILTAIRDPGQMLVQHLFDSLSVVAPLERGLPAAGSGARVKLPDVGSGGGLPGVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LYRNAMRARLENQPNLWLFQQAVDDLMVQGDQVVGAVTQIGLRERARTVVLTAGTFLN
GLIHVGLQNYSGGRAGDPANSLGQRLKELQLEQGRLKTGTPER DGRSINYSVLEEQ
RGDLDPVPVESPLGKASMHPRQLEVGWTTHTNARATHEIIRGGLRSPMYSGVIEGVGF
PGDLDPVPVESPLGKASMHPRQLEVGWTTHTNARATHEIIRGGLRSPMYSGVIEGVGFE
YCPSIEDKIHRPADKASHQVFLEPEGLNTHEIYPNGVSTSLPFDVQYELIHSLEGLEN
HIILREGYALEYDYFDPALKSTLETKAISGLEPAGQLMGTTGVEERAAAQGLLAGANA
ALOAQGKEPMYRRDBAYLGYLVGULVTRGVTEPAYNETSRABYRLGLREDNADLGLI
EIGRRLGLVDDVRWDAFSRKRDAVAQEVERLKSTWVNPRVLPAHAAEALLGKAIEREY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similar to Escherichia coli glucose inhibited division protein A GidA or B3741 SWALL:GIDA ECOLI (SWALL:P17112) (629 aa) fasta scores: E(): 6.8e-164, 68.52% id in 629
                                   CLIWMRRSQGNI"
                                                             ASLQDFAKLAGRHVREGGTLVAMKGKVPDDEIQALQQHGHWTVERIEPLVVPALDAQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SLSDLLKRPNVSYEALMQARTDEGELLAGPGVLEDDVLAEQVETQVKYAGYIARQQDE
VQKHLSHEQQPIPADIDYDAVTSLSFEVRQKLKTHRPETIGQAARVSGVTPAAISLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /trānslation="mdfprefdvivvggghagteaalaaaragaqtlllthnietlgq
mscnpsiggigkghlvkevdalggamaiatdeagiqfrilnsskgpavratrvqadrv
                                                                                                 LAIMRAHWDVTCVDAVEKKTAFVRQMAGALGLPNLQAAHTRIEQLEPAQCDVVISRAF
                                                                                                                                                                                                                                                                                                                                                                                 in 200 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="gidA"
/locus_tag="BPP0001"
/note="HMMPfam hit to PF01134, Glucose inhibited division
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IHLKRLHYGSRKQAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="glucose inhibited divis
/protein id="CAE39742.1"
/db_xref="GI:33564800"
/db_xref="UniProt/TrEMBL:Q7W2I1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Bordetella parapertussis"
/mol_type="genomic DNA"
/strain="12822"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /locus_tag="BPP0001"
/note="PS01280 Glucose inhibited division protein A family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene="gidA"
locus_tag="BPP0001"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10cus_tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cransı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="ortholog of Bordetella pertussis (BX470248) BP0001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene="gidB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene="gidB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .348251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                xref="taxon:519"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _tag="BPP0002"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tag="BPP0001"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A, score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            division protein A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                         gene
                                                                                                                                 Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similar to Caulobacter crescentus chromosome partitioning protein Para or CG3753 SWALL:PARA CAUCR (SWALL:O05189) (267 aa) fasta scores: E(): 9.6e-46, 49.41% id in 255 aa, and to Bacillus subtilis sporulation initiation inhibitor protein Soj SWALL:SOJ_BACSU (SWALL:P37522) (253 aa) fasta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note=Tortholog of Bordetella pertussis (BX470248) BP0004 Similar to Caulobacter crescentus acetyltransferase, GnaT family Cc2209 SWALL:Q9A685 (EMBL:AB8005892) (207 aa) fasta scores: E(): 1.5e-11, 34.63% id in 205 aa, and to Rhizobium meliloti putative acetyltransferase protein R02624 or Smc02449 SWALL:Q92MJ2 (EMBL:AL591791) (308 aa) fasta scores: E(): 5.5e-10, 31.42% id in 245 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /locus_tag="BPP0003"
/note="ortholog of Bordetella pertussis (BX470248) BP0003
Similar to Caulobacter crescentus chromosome partitioning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation="mknippsksarvfcianqkggvgktttainlaaglathkqpvll
vdldpcgnatmgsgidkistlesnlyqvligeagieqteversesgotvlparhelsga
bidlvqmdererqlkaaidkiageydpvligepptlslitlnglaahhgviipmqesy
faleglsdlyntikryhrninnelrvigllrympdprwtlqqqvsaqleshfgdkvft
tyvprnvrlaeapsygmpgvvydrasrgaqayiafgaemiervkeld"
                                                                                                                                                                                                                                                                                                                                                                                                                    /trānslation="mpavlavlaahpapaaggelarleeaalmattveegmlyegmly
rwapsrakkarcynvlglstrpldeelayctrwyaghgvplivrltsigepdfsldagl
hergfvafdricynkapyvpettagasgelvertttgerfageagriceddaatraeh
arlgaaplenlpllvrdasgeciaaglaafdaelvglfdivtapgrrrogggaavlky
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transT_table=11
/product="Putative acetyltransferase,
/protein_id="CAE39745.1"
/db_xref="GI:33564803"
/db_xref="UniProt/TrEMBL:Q7W2H8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="ParA family protein"
/protein_id="CAE39744.1"
/db_xref="GI:33564802"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               scores: E(): 1.3e-43, 48.98% id in 247 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="g1dB"
/locus_tag="BPP0002"
/note="PS00430 TonB-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /locus_tag="BPP0003"
/note="HMMPfam hit t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="UniProt/TrEMBL:Q7W2H9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="synonym: soj"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /locus_tag="BPP0002"
/note="HMMPfam hit to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="gidB"
                                                                                                                                                                                                                                                                                                                                                                                    LLEQASHAGARQAYLQVEPQNTAARALYARFGFVDRYTYWYRSMSEATPV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'gene="parA"
   Tocus tag="BPP0005"
note="ortholog of Bordetella pertussis (BX470248)
Similar to Pseudomonas putida probable chromosome
                                                                                                                                                                                                                                                      amily,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="parA"
                                                                                                 gene="parB"
                                                                                                                                                                                           gene="parB"
                                                                                                                                                                                                                                                                                             note="HMMPfam hit to PF00583, Acetyltransferase (GNAT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              locus_tag="BPP0004"
410. .4216
                                                                                                                                    locus_tag="BPP0005"
260. .5177
                                                                                                                                                                                                                                                                                                                      locus_tag="BPP0004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    locus_tag="BPP0004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .ocus_tag="BPP0003"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5e-33"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .4216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           table=11
                                                                                                                                                                                                                                                         score 2.5e-14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          score 1.7e-50"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TonB-dependent receptor proteins signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                to PF00991,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PF02527, Glucose inhibited division
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ParA family ATPase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GnaT family"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                score
```

BP0005

```
204 AAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAG
               GGTCAACTCCGAGTTC-----GACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACAT
                                                                                            CCGGGCCGCCGTCATGCAGGGCGGCCGGCCGGTGTTTCACGCCCCGCGCCCAGCGCCAGGC
                                                                                                                                                                                             CCGTCATGTGCAGAAAACGGCCGCCTCTGGCATCGCCGCGTTCGCCTTCGCCCAATGCAGG
                                                                                                                                                                                                                                             GCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGGCCCC
                                                                                                                                                                                                                                                                                               CCATCCGGCCGCACGCGGCCGGGCCGGTGGTCGTGATGAACGAGGATATCCATCTGGC
                                                                                                                                                                                                                                                                                                                                              CAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGAACCATGAACGACGAGATCCAGTCCGG
                                                                                                                                                                                                                                                                                                                                                                                                      GGCCACCGCGTTGAGCGCCGACGGGCCGGTCAATCTATACAACGCGGTGGCGTTGGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCGGCGACCGACGGCATCGTCATTACCCATGGCACCGATACGCTGGAAGAGACCGCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAATGACGTCGATGGCATCGTCATCACCCATGGCACCCGACACCCTGGAAGAAACCGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACATGAGCCATGCCGTCTGGCGCAGCTCGCGCTGCGCGCCGCCGCCGCTGTGCGACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTCAACTGGCCGGCCTGGCGCGCATCGGCGCCGAGCAGCATCGCCAACGTCGGCAGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCCAGCGGCGT---TACCGCGCCGGCTCGTACGGCGTCGGGCAGTTGCTGGCGGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGCCGCGGATTGCTGTCCTGGCGACCGGCGCGCACCATTGCCGGCGCGCAAACCGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTGGCCAACGTGGTGATCCTGGCCACCGGCGCACCATCGCCGGCGCTGGCGCCAGCGC
                                                                                                                                              GCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="UniProt/Trembl:Q7w2H7"
/tremblation="MarkkpkGlgrgldallgadupaidnigkapaaapegppatlpv/
tremblation="MarkkpkGlgrgldallgadupaidnigkapaaapegppatlpv
skmragkyQprtrmdbgallnelasirtqgimQpilvrallgadapgQyeiiagerffr
aaqlagikgvpylvreyadenaavmalieniqbedlmplebahgvrrlldefglfheq
aaqaigrsrsatsnilrllnlaapvQtwllagdvdmgharallavdaatqiqlaaqvi
akkllyreaekklvaraqkdvdmaaprkkgngasrdvtrleealsdhlgtrvalkvgare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/transI_table=11
/product="probable chromosome
/protein_id="CAE39746.1"
/db_xref="GI:33564804"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="par8"
/locus_tag="BPP0005"
/note="HMMPfam hit to PP02195, ParB-like nuclease domain,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KGQIVIDFHGWEHLNSLLERQGLSGVVDA"
4377. .4658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      partitioning protein ParB SWALL:PARB PSEPU (SWALL:P31857) (290 aa) fasta scores: E(): 1.3e-40, 48.81% id in 295 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'locus_tag="BPP0006"
'EC_number="3.5.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ocus_tag="BPP0006"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 264.6; DB
Pred. No. 3e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M1smatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      409; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             partitioning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 348251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ParB'
                                                                                                                                                                                                5720
                                                                                                                                                                                                                                                                                               5660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5243
                                                                                                                                                                                                                                                                                                                                                 503
                                                                                                                                                                                                                                                                                                                                                                                                   5600
                                                                                                                                                                                                                                                                                                                                                                                                                                                   443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     143
                                            677
                                                                                              5780
                                                                                                                                                                                                                                               563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
BX640437
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                      gene
                                                                                              gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5781 CGCCGACGCTCCAGGCCGGACGACTGCCGCAGCAGGCCTGGCCGCGGGTCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Parkhill, J., Sebaihia, M., Preston, A., Murphy, L.D., Thomson, N., Harris, D.B., Holden, M.T.G., Churcher, C.R., Bentley, S.D., Mungall, K.L., Cerdeno-Tarraga, A.M., Temple, L., James, K., Harris, B., Quail, M.A., Achtman, M., Atkin, R., Baker, S., Basham, D., Bason, N., Cherevach, I., Chillingworth, T., Colling, M., Cronin, A., Davis, P., Doggett, J., Feltwell, T., Goble, A., Hamalin, N., Hauser, H., Holroyd, S., Jagels, K., Leather, S., Moule, S., Norberczak, H., O'Neil, S., Ormond, D., Price, C., Rabbinowitsch, B., Rutter, S., Sanders, M., Saunders, D., Seeges, K., Sharp, S., Simmonds, M., Skelton, J., Squares, R., Squares, S., Stevens, K., Unwin, L., Whitehead, S., Barrell, B.G. and Maskell, D.J.
Comparative analysis of the genome sequences of Bordetella perfusaging and Paradactive analysis of the genome sequences of Bordetella
                                                                                                                                                                                                                                                                                                                                                      Direct Submission

Submitted (06-AUG-2003) Submitted on behalf of the Pathogen Submitted (06-AUG-2003) Submitted, Wellcome Trust Genome Car
                                                                                                                                                                                                                                                                                                                                              Sequencing Unit, Sanger Institute, Wellcome Trust Gene Hinxton, Cambridge CB10 1SA, E-mail: ms5@sanger.ac.uk
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sebaihia,M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pertussis, Bordetella parapertussis and Bordetella bronchiseptica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alcaligenaceae; Bordetella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; Betaproteobacteria; Burkholderiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bordetella bronchiseptica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bordetella bronchiseptica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complete genome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BX640437.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bordetella bronchiseptica strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Inpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGGAGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   сствалсссвелалавесссвелтсствесватветвеслатвасславассслевасьв
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGGTGGGGCGCAATATCGAGATCGACGACGACGCCTGCGGCTTCATTGCCGCCGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCCACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGGGCATCGTGCTGGCCGGCGTGGGCCGACGGCAACGCCACCGACGCCCTGCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTGCATGCCTGTGTCGATCTCGACGGCGAGCTCATCGATTTCATGGCCGGG----CGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCGCGCCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTCAGCCCCCAGAAGGCCCGCGTGCTTACCCTGGGCCTGTGCCAGACCCGCGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 347356)
/gene="gidA"
/locus tag="BB0001"
/note="ortholog of Bordetella pertussis (BX470248) BP0001"
                                                                                                                                                                                                8
                                                                                                                                                                                                                     /organism="Bordetella bronchiseptica RB50"
/mol_type="genomic DNA"
/strain="RB50"
                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                         /gene="gidA"
                                                                                                                    locus_
                                                                                                                                                                                                                                                                                                  .347356
                                                                                                                                                                                             xref="taxon:257310"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  990
                                                                                                                 _tag="BB0001"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      347356 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RB50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RB50,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-MAY-2004
                                                                                                                                                                                                                                                                                                                                                                         Campus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5840
```

გ 밁 श्च 윰 ঠ 밁 श्च

8 밁 र् 문 δ 밁 S 밁 δ 문

Matches

552, 24

Conservative

0

Query Match Best Local Similarity

26.1%; 56.7%;

gene

5170. .617

gene="ansB"

score 5.9e-34"

misc\_feature

88

gene="ansB"

문

```
gene
                                                                                                                                                                              Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LYRNAIRARLENQPNLWLFQQAVDDLMVQGDQVVGAVTQIGLRFRARTVVLTAGTFLN
GLIHVGLQNYSGGRAGDPANSLGQRLKELQLPQGRLKTGTPFRI DORSINYSVLEEQ
PGDLDPVPVFSFLGKASMHPRQLFCWITHTNARTHEIIRGGLDRSPMYSGVIEGVGFR
YCPSIEDKIHRFADKASHQVFLEPEGLMYHEIYPNGVSTSLFFDVQYELHSLFGLEN
AHILRPGYAIEYDFDFALKSTLETKAISGLFFAGQINGTTGYBEAAAQGLLAGANA
ALQACGKEPWVFRDBAYLGVLDDLVTRGVTBYFMFTSRABYRLSLREDNADLRLT
EIGRRLGLUDVDWDDAFSRKBOAVAQOVERLKSTWNIPSVLPAHAABALLGKAIEREY
SLSDLLKRPNVSYEALMQARTDEGELLAGPGVLEDDVLAEQVETQVKYAGYIARQQDE
VQKHLSHEQQFIPADIDYDAVTSLSFEVRQKLKTHRPETIGQAARVGGVTPAAISLLL
VQKHLSHEQQFIPADIDYDAVTSLSFEVRQKLKTHRPETIGQAARVGGVTPAAISLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /locus tag="BB0001"
/note="PS01280 Glucose inhibited division protein A family signature_1."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /trānslation="MSAVPDIPGGPAQRLAQACDALRLPADAGQQQKLLRYIBQMQRW
NRTYNLTAIRDPGQMLVQHLFDSLSVVAPLERGLPGVVLAIMRAHWDVTCVDAVEKKT
AFVRQMAGALGLPNLQAAHTRIBQLEPAQCDVVISRAFASLQDFAKLAGRHVREGGTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                division protein A, score 0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1129.000, SD 3.03 at aa
ETIGQAARVSGVTPAAISLLLI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /trānslation="mdfprefdVIVVGGGHAGTEAALAAARAGAQTLLLTHNIETLGQ
MSCNPSIGGIGKGHLVKEVDALGGAMAIATDEAGIQFRILNSSKGPAVRATRAQADRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product-"glucose inhibited division
/protein_id="CAB30503.1"
/db_xref="GI:33575040"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     vamkgkvpddeioaloohghwtverieplvvpaldaorcliwmrrsogni"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/transI_table=11
/product="glucose inhibited division
/protein_id="CAB30504.1"
/db_xref="GI:33575041"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /locus_tag="BB0001"
/note="HMMPfam hit to PF01134,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IHLKRLHYGSRKQAA"
/product="ParA family protein"
/protein_id="CAE30505.1"
                                                                                                                                                                                                                                                                                     'locus_tag="BB000z"
'note="HMMPfam hit to PF02527, DE Glucose inhibited
livision protein, score 4.7e-42"
                                                                                                                                                                                                                                                                                                                                                                                                        2004. .2519
                                                                                                                                                                                                                                                                                                                                                                                                                                              /locus_tag="BB0002"
/note="PS00430 TonB-dependent receptor proteins signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'gene="gidB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tocus_tag="BB0002"
note="ortholog of Bordetella pertussis (BX470248) BP0002"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note=^{\text{m}}Predicted helix-turn-helix motif with score .129.000, SD 3.03 at aa 604-625, sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene="gidA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'gene="gidA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'gene="gidA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="UniProt/TrEMBL:Q7WRF1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon start=1
                                                        codon_start=
transl_table
                                                                                                                                                                                                                                                                                                                                                                            gene="gidB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       db_xref="UniProt/TrEMBL:Q7WRF0"
                                                                                              note="ortholog of Bordetella pertussis (BX470248) BP0003"
                                                                                                                                                                                                  note="synonym: soj"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="gidB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              locus_tag="BB0002"
917. .2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       locus_tag="B80001"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 1893
                                                                                                                             _tag="BB0003"
                                                                                                                                                                                                                            _tag="BB0003"
                                                           table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DE Glucose inhibited
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                 Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
```

```
/product-"probable chromosome partitioning protein ParB"
/protein_id="CAE30507.1"
/protein_id="CAE30507.1"
/db_xref="CI:33575044"
/db_xref="UniProt/TrembL:Q7WRE7"
/translation="MATKEPKGLGRGLDALLGADVPAIDNIGKAPAAAPEGPPATLPV
skmrackryOprtrmdegalnelsesirtogimOpilvralgadapGQYEIIAGERRFR
AAQLAGIKEVPVLVREVADENAAVMALIENIQREDLMPLEEAHGVRRLLDEFGLTHEQ
AAQAIGRSRSATSNILRLAINLAAPVQTMLLAGDVDMGHARALLAVDAATQIQLANQVI
AAQAIGRSRSATSNILRLAINLAAPVQTMLLAGDVDMGHARALLAVDAATQIQLANQVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="BB0003"
/note="HMMPfam hit to PF00991, DE ParA family ATPase,
score 1.5e-33"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="GI:33575042"
/db_xref="UniProt/Tierbel:Q7WRE9"
/db_xref="UniProt/Tierbel:Q7WRE9"
/tabalation="MKNIPBEKSARVPCIANQKGGVGKTTTAINLAAGLATHKQRVLL
/tabalation="MKNIPBEKSARVPCIANQKGGVGKTTTAINLAAGLATHKQRVLL
VDLDPQGNATMGSGIDKSTIESNLYQVLIGEAGIEQTRVRSESGGYDVLPANRELSGA
EIDLVQMDERERQLKAAIDKLAGEYDFVLIDCPFLSLTILUGAAAHGVIIPMQCEY
FALEGLSDLVMTIKRYHRAINNELRVJGLLRVMFDPRNTLQQQVSAQLESHFGDKVFT
TVVPRNVRLAEAPSYGMPGVVYDRASRGAQAYIAFGAEMIERVKELD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  domain, score 5.9e-34<sup>n</sup>
4665. .4730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="GI:33575043"
/db_xref="Unitrot/Tiembl:Q7WRE8"
/tiemslation="WPAVLAVPAHPAPAAGGELARLERAALNATTVREQMLYEGWLV
RWAPSRAKRARCVNVLGLSTRPLDERLAYCTRWYAGHGVPLIVRLTSIGPDFSLDAQL
                                                                                                                                                                                                                                                                                                                                                      1537.000, SD 4.42 at aa
LTHEQAAQAIGRSRSATSNLLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HERGFVAFDRTCVMAAPVVPFTAQAPSGLVFERTTPGRFAQEAGRLRGHDDAATAEHA
ARLQAAPLENLPLLVRDASGECIAAGLAAFDAELVGLFDIVTAPQRRRQGCGAAVLKY
                                                                                      /locus_tag="BB0006"
/EC_number="3.5.1.1"
/note="ortholog of Bordetella pertussis (BX470248) BP0006"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KGQIVIDFHGWEHLNSLLERQGLSGVVDA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              akrlsvreaeklvaraqkdvdaaprkkgngasrdvtrleealsdhlgtrvalkvgare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              family, score 2.5e-14"
4200. .5117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LLEQASHAGARQAYLQVEPQNTAARALYARFGFVDRYTYWYRSMSEATPV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /locus_tag="BB0004"
/note="ortholog of Bordetella pertussis (BX470248) BP0004"
                                                                                                                                                                                             'gene="ansB"
                                                                                                                                                                                                                    10cus_tag="BB0006"
110. .6111
                                                                                                                                                                                                                                                                                                                                                                                    ^{\prime}note=^{-}Predicted helix-turn-helix motif with score L537.000, SD 4.42 at aa 156-177, sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="parB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /locus_tag="BB0005"
/note="HMMPfam hit to PF02195,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1/
transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 locus_tag="BB0005"
note="ortholog of Bordetella pertussis (BX470248) BP0005"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       locus_tag="BB0004"
note="HMMPfam hit to_PF00583, DE Acetyltransferase (GNAT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'product="Putative acetyltransferase,
'protein_id="CAE30506.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               transl_table=
product="L-asparaginase II
                                 codon_start=1
transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene="parB"
                                                                                                                                                                                                                                                                                          gene="ansB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ocus_tag="BB0005"
00. .5117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ocus_tag="BB0004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                   tag="BB0005"
                                 _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DE ParB-like nuclease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GnaT family"
```

```
Query Match 26.0%;
Best Local Similarity 56.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5661
                                                                                                                                                                                                                                                                                                                                                               5838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        264 CAATGACGTCGATGGCATCGTCATCACCCATGGCACGACACCCTGGAAGAAACCGCCTA 323
5361 TCCGGCGACCGACGGCATCGTCATTACCCATGGCACCGATACGCTGGAAGAGACCGCTTA 542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5781 CGTGCATGCCTGTGTCGATCTCGACGGCGAGCTCATCGATTTCATGGCCGGG---CGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5421 TTTCCTCAGCCTGGTATTGCCTGTGGATAAACCCGGTGGTGCTGCTGCGCCCATGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        504 GCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGGCCC 563
858 TTTCGTGCTGACGCCGAGCAGCCGACCAAGAACGACTGGGTCGTGGCCCACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24 GCTGGCCAACGTGGTGATCCTGGCCGGCGGCGCCACCATCGCCGGCGCTGGCGCCAGCGC 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        555; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAG
                                                                                                                                                     cerécaéceses a de consecue de la con
                                                                                                                                                                                                                                                  cciecaegaecrececaaeaacegecerecaearcarrecricercaecrecaecege
                                                                                                                                                                                                                                                                                                                                                          CCAGGGCATCGTGCTGGCCGGCGTGGGCGACGGCAACGCCACCGACGCGCCCTGCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAGGCGCTGATCCATGCCGGCACCCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGCCGACGCGCTGCTCAGGCCGGACGAACTGCCGCAGCAGGCCTGGCCGCGGGTCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTCAACTCCGAGTTC-----GACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ecriegecaregregregaagecaagerceracregricegecregeceaageceacae 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGTCATGTGCAGAAAACGGCCGCCTCTGGCATCGCCGCGTTCGCCTTCGCCCAATGCAGG 5660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCATCCGGCCGCACGCGGCCGCGGGCCGCTGGTCGTGATGAACGAGGATATCCATCTGGC 5600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAACAAGGACTCGCGCGCAAGGGCGTGCTGCTGACCATGAACGACGACGACGATCCAGTCCGG 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCCACCGCGTTGAGCGCCGACGGGCCGGTCAATCTATACAACGCGGTGGCGTTGGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGTCGGTTCCATGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAG 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTCAACTGGCCGGCCTGGCGCGCATCGGCGCGAGCAGATCGCCAACGTCGGCAGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCCAGCGGCGT---TACCGCGCCGGCTCGTACGGCGTCGGGCAGTTGCTGGCGGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGCCGCGATTGCCGTCCTGGCGACCGGCGCACCATTGCCGGCGCGCAAACCGACGC 5183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein_id="CAE30508.1"
/db_xref="GE133575045"
/db_xref="UniProt/Tremb1:Q7WRE6"
/db_xref="UniProt/Tremb1:Q7WRE6"
/tanelation="MPERFLIPRIA LLATGGTIAGAQTDAASGAYRAGSYGVGQLLAAV
PQLAGIARIGAEQIANVGSQNMSHAVWRQIALEAAALCDDPATDGIVITHGTDTLEET
AYPLSLVI,PVDKEVVLLGAMRPATALSADGPVNLYNAVALACHPAARGRGPLVVMNED
IHLARHVQKTAASGIAAPASPMGRAGGTWQGGREVFHARAERCAADALLRPDELPQQA
WPRVDIVHACVDLDGELIDFMAGRAGGIVLAGVGDGNATDAALQALQRASARGVAVVR
ASRTGSGRVGRNIEIDDDACGFIAAGDDSPQKARVLLTIGLCQTRDTARLQALPDSR"
5110. .5172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 415; Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 264; DB 1; Length 347356; Pred. No. 3.6e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                          5897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5360
                                                        917
                                                                                                                                                                                                                                                       857
                                                                                                                                                                                                                                                                                                                                                                                                                                                       797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5300
                                                                                                                                                          5957
```

B 8 B 8 B 8 B

र् 문 ঠ 문 श्च 밁 र् 밁 ક 문 S 문 श्च 밁 १ 밁 ई

중 유

	6078 CGCGCCCTGCAGGCGTTGTTC 6099		문
	978 CAAGGAGCTGCAGCGCATTTTC 999	·	\$
607	6018 CCTCAGCCCCCAGAAGGCCCGCGTGCTGCTTACCCTCGGCCTGTGCCAGACCCGCGATAC 607	601	문
977	918 CCTGAACCCGCAGAACGCCCGCATCCTGGCGATGGTGGCAATGACCCAGGACCCAGGACAG 977	·	\$
601	5958 CAGGGTGGGGCGCAATATCGAGATCGACGACGACGCCTGCGGCTTCATTGCCGCCGGCGA 601	595	몽

Search completed: March 22, Job time : 4641 secs

2005, 11:48:42

Ipis Page Blank (uspto)

```
Minimum
Maximum
                                                                                                                                                                                  Database :
                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                  80
80
                                                                                                                                                                                                                                                                seq length: 0 seq length: 2000000000
                                                                              March 22, 2005, 05:44:16; Search time 657 Seconds (without alignments) 9136.404 Million cell updates/sec
    8:
9:
10:
11:
12:
13:
                                                                                                                                                                                                                                                                                                                                                            IDENTITY_NUC Gapop 10.0 , Gapoxt 1.0
                                                                                                                                                                                                                                                                                                                                   4390206 seqs, 2959870667 residues
                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-842-628-1
1014
                                                                                                                                                                                                          Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                      aaggaagtggagaaccagca.....ttttctgggaatactgataa 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Copyright
geneseqn2003cs: *
geneseqn2003ds: *
geneseqn2004as: *
geneseqn2004bs: *
                                                      geneseqn2003as:*
geneseqn2003bs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 5.1.6 (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                          8780412
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

15 16 17 18 19 20	c 112 10 10 11 12 12 12 12 12 12 12 12 12 12 12 12	0 40040668	Regult
205.6 200.6 189.2 178 167 158.2	240.8 240.4 219 219 219 209.2 207.2	1014 742 742 562.2 281 273 261.6 252.2	Score
20.3 19.8 18.7 17.6 16.5	23.7 21.6 21.6 20.6	100.0 73.2 73.2 25.4 26.9 24.9	Query Match
1303 1330 1128 1137 1400 110000	1848 1071 1133 1133 1174 270	1014 1182 1335 2748 300 1125 2837	Query Query Match Length
10 12 12 12 12 12 12 12 12 12 12 12 12 12	11 8 3 2 11 2	31921112	DB
ADO07178 ADO07182 ADI36573 ADN97129 ADO07180 ACP67367_15	AAT96346 ACH94935 AAX03474 AAC62512 ABZ80801 ABD07233	AAQ68438 ABD07189 ABD07273 ABD07169 AAQ43365 ADA31049 AAN70557 AAX82834	SUMMARIES
Ad007178 Ad007182 Ad136573 Ad197129 Ad097180 Continuat	Aat96346 Ach9493 Aax03474 Aax63512 Abz80801 Abd0723	Aaq68438 Abd0718 Abd0726 Abd0727 Abd07365 Aaq43365 Ada31049 Aan70557 Aax82834	Description
Ado07178 Aspergill Ado07182 Aspergill Adi36573 Bacillus Adn97129 ASBA01 as Ado077180 Aspergill Continuation (16 o		Aaq68438 Pseudomon Abd07189 Pseudomon Abd07273 Pseudomon Abd07169 Pseudomon Abd3365 Pseudomon Aaq43365 Pseudomon Aada31049 DNA encod Aan70557 Sequence Aax82834 L-asparag	tion

		ი					,	O	ი		ი	ი	ი											ი
	5 4	4.3	42	41	40	9	38	37	36	<u>ა</u>	<u>۵</u>	ü	32	31	30	29	28	27	26	25	24	23	22	21
	70	71.2	72.2	72.2	72.2	72.2	74.6	75.8	78.8	80.2	82.6	83	83	85.2	110	118.2	122.8	129	138	138	145.6	156.2	157.2	158.2
	6.9	7.0	7.1:	7.1	7.1	7.1	7.4	7.5	7.8	7.9				8.4	10.8	11.7	12.1	12.7	13.6		14.4	15.4	15.5	
	2364	110000	110000	966	960	960	1191	926	2772	3823	990	110000	110000	345	1236	1260	1470	1041	110000	110000	1196	3223	1044	249878
	ω ο	9	10	13	12	10	œ į	2	Ľ	13	N	4		σ	12	12	12	10	N	N	N	12	10	10
ALIGNMENTS	ABV74978	ABA90521_07	ABS56454_17	ADR92156	ADM92005	ABX07792	ACA26934	ACH87387	ABD07234	ADR07996	ACH89418	AAI99683 <sup>17</sup>	AAI99682 17	ABX66196	ADO07188	ADO07184	ADO07186	ADF00934	AAT42063_08	AAT42063_07	AAX14328	ADN97128	ACF68782	ACF65381
	Abv74978 Synthetic	Continuation (8 of	Continuation (18	Adr92156 Novel S.	Adm92005 S pneumon	Abx07792 S. pneumo	Aca26934 Prokaryot		Abd07234 Pseudomon	Adr07996 Full leng	Ach89418 Human g	Continuation (18 o	Continuation (18 o	Abx66196 Helicobac	Ado07188 Penicilli	Ado07184 Fusarium	Ado07186 Fusarium	Adf00934 Bacterial	Continuation (9 of	Continuation (8 of	Aax14328 H. pylori	Adn97128 ASPA01 as	Acf68782 Photorhab	Acf65381 Photorhab

25-MAR-2003 12-JAN-1995 Glutaminase; antiviral; virucide; anticancer; cancer therapy; HIV virus; gene therapy; Escherichia coli; ds. WPI; 1994-217891/26. P-PSDB; AAR59739. Roberts J, Macallister TW, Sethuraman N, 04-DEC-1992; 04-DEC-1992; 23-JUN-1994. WO9413817-A1. Pseudomonas sp. Pseudomonas glutaminase gene. AAQ68438; (MEME-) ME MEDICAL ENZYMES AG. (revised) (first entry) 92WO-US010421. 92WO-US010421. Freeman AG;

Disclosure; Page 33; 60pp; English. anticancer therapy.

Recombinant glutaminase derived from Pseudomonas 7A - expressed in E. coli to increase yield and avoid Pseudomonas endotoxins for antiviral

and

Chromosomal DNA from Pseudomonas sp. 7A (ATCC 29598) was used to construct a genomic library in Escherichia coli LE392. Screening with mixed oligonucleotide probes was solate a glutaminase- encoding clone. This was sequenced using the primers given in AAQ68439-47. The gene can be used to manufacture recombinant glutaminase, free of Pseudomonas exotoxin, for use in e.g. HIV and cancer therapy. The gene

S

밁

ន្តន្តន្ត

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 1014; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               may also be used in correct PN field.)
                                                                                                   841
                                                                                                                                       781
                                                                                                                                                                       781
                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGAAGTGGAGAAACCAGCAGAAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGTGGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGGCTGCCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCGCCGGCGCTGGCGCCAGCGCCCAACACACCACCTACCAGGCTGCCAAGGTTGGC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1014 BP; 226 A; 324 C; 318 G; 146 T; 0 U; 0 Other;
                                                                                                                                                                                                             CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                  CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                 CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                         GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCGTGGTCGGTTCCATGCGCCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACACCCTGGAAGAAACCGCCTACTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCGCCGGCGCTGGCGCCAGCGCCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGCACC
                    TGGGTCGTGGCCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATG
                                                                  TCACGTCAACAGGGCGGTTTCGTGCTGCTGACGCCGAGCAGGACGACGACAAGAACGAC
                                                                                             TCACGTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACGAAGAACGAC
                                                                                                                                       CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                   CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACAACGCCGTGGCCGTGGCCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene therapy protocols. (Updated on 25-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 1014; DB 2; 100.0%; Pred. No. 2.5e-166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ដ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                        660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
960
                                                                                                      900
                                                                                                                                         840
                                                                                                                                                                        840
                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                 960
                                                                   900
                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                       660
                                                                                                                                                                                                                                                                                                                                                                                                                           600
```

ઈ

S 문 S 밁 S 밁 ð 밁 8 문 S

8 밁 δ 밁 S

5

문 δ 밁 δ

169

H

61

ATCGCCGGCGCTGGCGCCAGCGGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC 120 AAGGAAGTCGCACCGCAACAGAAACTGTCCAACGTGGTCATCCTGGCCACCGGCGCACC AAGGAAGTGGAGAAACCAGCAGAAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC

ATCGCCGGCGCGGCGAGCGCCAACAGCGCCACCTACACCGCCGCCAAGGTGCCG

288

Query Match 73.;
Best Local Similarity 83.9
Matches 851; Conservative

73.2%; Score 742; DB 11; 83.9%; Pred. No. 2.6e-119; tive 0; Mismatches 160;

Length 1182; Indels

u T

Gaps

۳,

60

228

र् 밁 중 유

밁

8 문 S

```
유 &
                                                 The invention relates to Pseudomonas aeruginosa polypeptides and the polymucleotides encoding them. The sequences are useful in diagnosis and continuous the prophylaxis and treatment of pathological conditions, as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from a continuous prophylaxis and treatment of pathological conditions resulting from a component such as a polypeptide, but the ability to bind a P. aeruginosa nucleic acid, as components of confective antibacterial targets, as targets for antibacterial drugs, continuous production of P. aeruginosa drugs, as templates for recombinant components for diagnosis and/or treatment of P. aeruginosa caused components for diagnosis and/or treatment of P. aeruginosa caused components for diagnosis and/or treatment of P. aeruginosa caused components for diagnosis and/or treatment of P. aeruginosa sequences or other sequences of Pseudomonas species using blochip technology. Sequences ABD1397-CC ABD17967 represent P. aeruginosa polymucleotides of the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic format from USPTO at
                                                                                                                                                                                                                                                                                                                                                                                                   Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from bacterial infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacterial infection; gene; ds; Pseudomonas aeruginosa infection; antibacterial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABD07189 standard; DNA; 1182 BP
 Sequence 1182 BP;
                                                                                                                                                                                                                                                                                                                                                                  Disclosure; SEQ ID NO 5793; 455pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rubenfield MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-FEB-1998;
27-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US6551795-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pseudomonas aeruginosa polynucleotide #5793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-JUL-2004
                                   seqdata.uspto.gov/sequence.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABD07189;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GENO-) GENOMB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2003-615309/58.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGATAA 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGATAA 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nolling J, Deloughery C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0074788P.
98US-0094190P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-00252991.
 247 A; 417 C; 361 G; 157 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bush
```

```
RESULT 3
ABD07273/c
ID ABD07273 standard, DNA; 1335 BE
XX
AC ABD07273;
XX
DT 29-JUL-2004 (first entry)
XX
Endomonas aeruginosa polynucl
XX
KW Bacterial infection; gene; ds;
KW antibacterial.
                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
 Bacterial infection; gene; ds; Pseudomonas aeruginosa antibacterial.
                                               Pseudomonas aeruginosa polynucleotide #5877.
                                                                                                                                                                                                                  1129
                                                                                                                                                                                                                                                                            1069
                                                                                                                                                                                                                                                                                                                                      1009
                                                                                                                                                                                                                                             958
                                                                                                                                                                                                                                                                                                         898
                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                  949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      649
                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                            688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                   CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                       ATGACCAAGACCCAGGACAGCAAGGAAGCTGCAGCGCATTTTCTGGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                              GACTGGGTCGTGGCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCA 957
                                                                                                                                                                                                                                                                                                                                                                    TCAC---GTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGTAGGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAACGACGAGATCCTCTCCGGCCGACGCGAGCAAGATGGTCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACAACGCCGTGGCCGGCAGCAACAAGGACTCGCGCGAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCGTGGTCGGTTCCATGCGCCCCGGCACGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ĠŦĊĠĀĊĊĀĠŦŦĠĊŤĠĠĊĊĀĠĊĠŦĠĊĊĠĊĀĠĊŤĊĀĀĠĞĀĊĀŦĊĠĊĊĀĀĊĠŦĊĊĠĊĠĢŖĀ
                                                                                                                                                                                                                 ATGACCAAGACCCAGGACAGCAAGGAGCTGCAACGGATCTTCTGGGAATACTGA 1182
                                                                                                                                                                                                                                                                            GACTGGATCGTCGCCCACGACCTGAACCCCGCAGAAGGCGCGCATCCTGGCCGCGGTCGCG
                                                                                                                                                                                                                                                                                                                                      TCGCACGTCAATGCCGGCGGCTTCGTCCTGCGCAACGCCGAGCAGCCGGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                  GCGCGCGTGGTGCCGACCCTGCAGGAACTGCGCAAGCAGGGCGTGCAGATCATCCGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGCCCAGGCCGCCAAGGCGATCATCCATGCCGGCACCGGCAACGGCTCGGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCTCCGGTGGAAATCGCCTACAGCTACGGCAACGTCAGCGACACCGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGCGCACCGGTGAAGCGGCACACGGTGAACTCCGAGTTCGACATCAAGCAGATCTCCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGTTCAAGAGCCCGTGGGGCCCCGCTGGGCATGGTCGAGGGCAAGAGCTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACAACGCCGTGGCGGTGGCCGGCGACAAGTCGGCACGCGGCAAGGGCGTGCTGATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACACCCTGGAAGAGACCGCCTACTTCCTGACCCTGGTCGAGCACACCGAGAAGCCTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCGTCGCCAAGCTGGCCGATAGCGACGACGTCGACGGCATCGTGATCACCCCACGGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGTGTTCCAGATCGCCTCGGAAAGCTTCACCAACGAGAACCTGCTGGAACTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                        ВP
                    infection;
                                                                                                                                                                                                                                                                                                                                                                    897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                      1068
                                                                                                                                                                                                                                                                                                                                                                                                  1008
                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                              948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    468
```

```
ঠ
                                                                                                                                                   밁
                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                  S
                                                                          밁
                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to Pseudomonas aeruginosa polypeptides and the CC polymucleotides encoding them. The sequences are useful in diagnosis and content the pathological conditions, as molecular targets for diagnostics, cC prophylaxis and treatment of pathological conditions resulting from a compony pathological infection, for evaluating a compound, such as a polypeptide, bacterial infection, for evaluating a compound, such as components of cffective antibacterial targets, as targets for antibacterial drugs, cc including anti-P. aeruginosa drugs, as templates for recombinant components for diagnosis and/or treatment of P. aeruginosa caused components for diagnosis and/or treatment of P. aeruginosa caused components for diagnosis and/or treatment of P. aeruginosa caused components for diagnosis and/or treatment of P. aeruginosa or other sequences of Pseudomonas species using biochip technology. Sequence ABD1397-CC ABD17967 represent P. aeruginosa polynucleotides of the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic format from USPTO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Simi
Matches 851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1335 BP; 189 A; 404 C; 485 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; SEQ ID NO 5877; 455pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rubenfield MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-FEB-1998;
27-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US6551795-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seqdata.uspto.gov/sequence.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pathological conditions resulting from bacterial infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GENO-) GENOME
                                                                                                                                                                                                                                  1119
                                                                                                                                                                                                                                                                                                              1179
                                                                                                                                                       1059
                                                                                                                                                                                                                                                                                                                                                                                         1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2003-615309/58.
DB; ABO73702.
939
                                      301
                                                                            999
                                                                                                                 241
                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                   13
                                                                                                                                                                                                                                                                                                                                                                                                                             1 AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                      GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                     CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                   ATCGCCGGCGCTGGCGCCAGCGCGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC
                                                                              ACCGTCGCCAAGCTGGCCGATAGCGACGACGTCGACGGCATCGTGATCACCCACGGTACC
                                                                                                                                                                                                                                    GTCGACCAGTTGCTGGCCAGCGTGCCGCAGCTCAAGGACATCGCCAACGTCCGCGGCGAA
                                                                                                                                                                                                                                                                      GICGACAAGCIGATIGCCGGCGIGCCGGAGCIGGCCGACCIGGCCAAIGIGCGCGGCGAG 180
                                                                                                                                                                                                                                                                                                              ATCGCCGGCGGCGCCAGCGCCCAACAGCGCCCACCTACACCGCCGAAGGTGCCG 1120
                                                                                                                                                                                                                                                                                                                                                                                         AAGGAAGTCGCACCGCAACAGAAACTGTCCAACGTGGTCATCCTGGCCACCGGCGGCACC
  GACACCCTGGAAGAGCCGCCTACTTCCTGACCCTGGTCGAGCACACCGAGAAGCCTATC
                                                                                                    AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                         CAGGIGITCCAGATCGCCTCGGAAAGCTTCACCAACGAGAACCTGCTGGAACTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         THERAPEUTICS CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0074788P.
98US-0094190P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9908-00252991.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nolling J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  73.2%; Score 742; DB 11;
83.9%; Pred. No. 2.6e-119;
tive 0; Mismatches 160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Deloughery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                257 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bush
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1335;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

361

GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG

420

880

360

1000 240 1060

300

940

120 1180

```
5
                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                             ঠ 🖁 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                 US6551795-B1
 WPI; 2003-615309/58
                       Rubenfield MJ,
                                                                  18-FEB-1998;
27-JUL-1998;
                                                                                                    18-FEB-1999;
                                                                                                                          22-APR-2003
                                                                                                                                                                      Pseudomonas aeruginosa
                                                                                                                                                                                                     Bacterial infection; gene; ds; Pseudomonas aeruginosa infection;
                                                                                                                                                                                                                            Pseudomonas aeruginosa polynucleotide #5773
                                                                                                                                                                                                                                                   29-JUL-2004
                                                                                                                                                                                                                                                                         ABD07169,
                                                                                                                                                                                                                                                                                              ABD07169 standard;
                                             (GENO-) GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         879
                                                                                                                                                                                                                                                                                                                                                                                                                       898
                                                                                                                                                                                                                                                                                                                                                                                                                                            399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACAACGCCGTGGCCGGCCAGCAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACTGGGTCGTGGCCCACGACCTGAACCCGCAGAAGGCCCCGCATCCTGGCGATGGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGCGCGTGGTGCCGACCCTGCAGGAACTGCGCAAGCAGGGCGTGCAGATCATCCGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTTCAAGAGCCCGTGGGGCCCGGCTGGGCATGGTCGAGGGCAAGAGCTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTTCAAGAGCGCCTGGGCCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGAACGACGAGATCCTCTCCGGCCGCGCGAGCAGCAGATGGTCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACAACGCCGTGGCGGCGGCGACAAGTCGGCACGCGCAAGGGCGTGCTGATCACC
                                                                                                                                                                                                                                                                                                                                                                         ATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                 GACTGGATCGTCGCCCACGACCTGAACCCGCAGAAGGCGCGCATCCTGGCCGCGGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGCACGTCAATGCCGGCGGCTTCGTCCTGCGCAACGCCGAGCAGCCGGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAC---GTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGGCCCAGGCCGCCAAGGCGATCATCCATGCCGGCACCGGCAACGGCTCGGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGCTCCGGTGGAAATCGCCTACAGCTACGGCAACGTCAGCGACACCGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCGCACCGGTGAAGCGGCACACGGTGAACTCCGAGTTCGACATCAAGCAGATCTCCGCG
                                                                                                                                                                                                                                                   (first entry)
                                             THERAPEUTICS CORP
                                                                  98US-0074788P.
98US-0094190P.
                                                                                                    99US-00252991
                      Nolling
                                                                                                                                                                                                                                                                                              DNA;
                      ŗ
                                                                                                                                                                                                                                                                                              2748
                      Deloughery
                                                                                                                                                                                                                                                                                               BP
                       ú
                       Bugh
                       Ď,
                                                                                                                                                                                                                                                                                                                                                     226
                                                                                                                                                                                                                                                                                                                                                                                                                       957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
```

P-PSDB; ABO73598.

Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from bacterial infection.

Disclosure; SEQ ID NO 5773; 455pp; English

CC The invention relates to Pseudomonas aeruginosa polypeptides and the polynucleotides encoding them. The sequences are useful in diagnosis and cherapy of pathological conditions, as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from a cc bacterial infection, for evaluating a compound, such as a polypeptide, cc for the ability to bind a P. aeruginosa nucleic acid, as components of effective antibacterial targets, as targets for antibacterial drugs, cc including anti-P. aeruginosa drugs, as templates for recombinant cc production of P. aeruginosa-derived peptides or polypeptides, as target for antibacterial drugs, cc infection, and in detection of P. aeruginosa sequences or other sequences of Pseudomonas species using biochip technology. Sequences ABD01197-CC ABD17967 represent P. aeruginosa polynucleotides of the invention. Note: Cc Resequence data for this patent did not form part of the printed cc specification but was obtained in electronic format from USPTO at cc

Sequence 2748 BP; 504 A; 1016 C; 870 G; 358 T; 0 U; 0 Other;

맑 δ 밁 S S 밁 S 당 S 밁 δ 밁 S 밁 S 밁 S 문 Ś 밁 Query Match Best Local Similarity Matches 640; Conservative 481 421 684 361 301 564 241 504 181 444 324 121 384 264 CAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTA 323 61 CGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAG CTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGTCGGTCCATGCGCCC GCGTGACGTGAGCAAGTCGATCAACATCAAGACCCGAAGCCTTCAAGAGCGCCTGGGGGCCC CGTGCTGCGTAACGCCGAGCAGCACGACAAGAACGACTGGGTCGTGGCCCACGACCT CAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGC GGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCCTA 683 GCTGGGCATGGTGGTAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACAC 623 CGACAAGTCGGCACGCGCAAGGGCGTGCTGATCACCATGAACGACGAGATCCTCTCCGG GGGCACCGCGATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCGGTGGCCGG CGACGACGTCGACGGCATCGTGATCACCCCACGGTACCGACACACCCTGGAAGAGAGACCGCCTA GGAACTGCGCAAGCAGGGCGTGCAGATCATCCGCTCCTCGCACGTCAATGCCGGCGGCTT GGAGCTGCGCAAGAACGGCGTGCAGATCATTCGTTCGTCAC---GTCAACAGGGCGGTTT GCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCCCTGCA GGTGAACTCCGAGTTCGACATCAAGCAGATCTCCGCGCTGGCTCCGGTGGAAATCGCCTA GCTGGGCATGGTGGTCGAGGGCAAGAGCTACTGGTTCCGCGCACCGGTGAAGCGGCACAC CCGCGACGCGAGCAAGATGGTCAACATCAAGACCGAAGCGTTCAAGAGCCCGTGGGGCCC CAACAAGGACTCGCGCGCGAGGCGTGCTGCTGGTGACCATGAACGACGAGATCCAGTCCGG 55.4**%**; Score 562.2; DB Pred. No. 3e-88; 0; Mismatches 1 DB 11; 108; Indels Length 2748 ü Gaps 420 540 803 480 743 360 300 563 240 503 180 443 120 60 920 600 960

```
AAAQ43365
ID AAAQ4
XX AAAQ4
XX AAAQ4
XX AAAQ4
XX AAAQ4
XX AAAQ4
XX PBeu
XX PBE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-OCT-2003
25-MAR-2003
13-OCT-1993
                                               A gene library was prepared from Sau3A-digested chromosmal DNA of Pseudomonas 7A (ATCC 29598). Three oligonucleotide probes were synthesised based on amino acid sequences of peptide fragments from the N-terminus, middle and C-terminus of the mature glutaminase (see AAQ43362-Q43364, respectively). A single clone hybridised to all three probes. Further analysis resulted in isolation of a 1.1kb Sall fragment which encoded a 23 amino acid signal peptide and some of the N-terminal amino acids of the mature protein. Sequence AAQ43365 starts from the mature N-terminus of the glutaminase. The enzyme will be potentially useful in anti-tumour therapy in neoplastic tissues where glutamine levels are often increased. (Updated on 25-MAR-2003 to correct PN field.) (Updated on 24-OCT-2003 to standardise OS field)
Sequence 300 BP; 66 A; 95 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA encoding low mol.wt. human tissues or fluids !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-DEC-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  04-DEC-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-JUN-1993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DE4140003-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ungure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAQ43365;
                                                                                                                                                                                                                                                                                                                                                                                                 Claim 5; Fig 1; 16pp; German.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1993-189322/24.
P-PSDB; AAR37660.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Neoplasm;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAQ43365 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peeudomonae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ROBE/) ROBERTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAACCCGCAGAAGGCGCGCATCCTGGCCGCGGTCGCGATGACCAAGACCCAGGACAGCAA 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAA 980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTCCTGCGCAACGCCGAGCAGCCGACGACGACAAGAACGACTGGATCGTCGCCCACGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGCTGCAACGGATCTTCTGGGAATACTGA 751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         glutamine; anticancer; antiviral; therapy; as 7A-Glutaminase-Asparaginase; PGA; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ďe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7A glutaminase N-terminus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (revised)
(revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91DE-04140003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91DE-04140003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          200. .:
/*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   terminus of 200. .201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note= "corresponds to terminus of enzyme"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                      glutaminase
for treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              identified'
97 G; 40 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g - used
g cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       coding region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       first 100 amino acids at mature N-
0 U; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                                                                                                                                                                                                                                                                                                                                                            glutamine isolation HIV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660
```

Query Match

27.78;

Score

281;

띪

<u>ب</u>

Length 300; Other;

Sequence 1125

BP;

333

? 224

ü 223 <u>ن</u> 345 H

0 Ç

0 Other;

```
ADAJOLY 6
ADAJOLY 6
ADAJOLY 6
ADAJOLY 6
ADAJOLY 6
ADAJOLY 6
ACT ADAJOLY 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                           The invention relates to isolated Acinetobacter baumannii nucleic acids. The A. baumannii nucleic acids and polypeptides are useful as reagents for diagnosing a bacterial disease, as components of antibacterial vaccines, as targets for antibacterial drugs, to detect the presence of A. baumannii and other Acinetobacter species in a sample, in screening compounds for the ability to interfere with the A. baumannii life cycle or to inhibit A. baumannii infection, and as biocontrol agents for plants. The present sequence represents DNA encoding an A. baumannii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 dв;
                                                                                                                                                                                                                                                                                                                                                                                                                        vaccines,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA encoding
                                                                                                                                                                                                                                                                                                                                      Example; SEQ ID NO 2336; 328pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Breton G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-MAY-2003.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US6562958-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Acinetobacter baumannii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    vaccine; plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADA31049;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADA31049 standard; DNA; 1125 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GENO-)
                                                                                                                                                                                                                                                                                                                                                                                                                     Acinetobacter baumanii proteins and nucleic acids, useful as reagents diagnosing a bacterial disease, as components of antibacterial cines, as targets for antibacterial drugs, or as biocontrol agents for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene; Acinetobacter baumannii; bacterial disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2003-576092/54.
DB; ADA35175.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENOME THERAPEUTICS CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCGCCGGCGCTGGCCCAGCGCGCCAACAGCGCCCACCTACCAGGCTGCCAAGGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCGACAAGCTGATTGCCGGCGTGCGCGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGAAGTGGAGAAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCAC 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGTGATGCAGATCGCTCNNGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGAAGTGGAGAACCAGCAGAAGCTCGCCAACGTTGTGATCCTGGCCACCGGCGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bush D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Acinetobacter baumannii protein #2336.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    biocontrol agent.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0088701P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-00328352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 1.3e-39; 0; Mismatches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
```

```
ર્ફ
                                                                                               吊
                                                                                                                                    श्च
                                                                                                                                                                                               밁
                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     श्च
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
밁
                                                                                                                                                                                                                                                                                                                                                                                         용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Sim:
Matches 557;
                                                                                                  1035
                                                                                                                                                                                                                                                 861
                                             981
                                                                                                                                                  921
                                                                                                                                                                                                    975
                                                                                                                                                                                                                                                                                                         915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            555
                                                                                                                                                                                                                                                                                                                                                         804
                                                                                                                                                                                                                                                                                                                                                                                                         855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               195
                                                                                                                                                                                                                                                                                                                                                                                                                                                           744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGGCCGACCTGGCCAATGTGCGCGCGCGAGCAGCAGCTGATGCAGATCGCCTCCGAAAGCAT
AGAAATTCAACGCATGTTCTGGCAGTACTAA 1125
                                     GGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                  GAATCCTCAAAAAGCGCGTCTTCTTGCGGCGTTGGCACTTACCAAAAACCAACGATGCGAA
                                                                                                                                               GAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAA
                                                                                                                                                                                                    TGTATTACGTGÁTGCAGAACAACCTGÁCTCTÁAATÁTGGTTGGGTAGCAGCTCÁTGÁTTT
                                                                                                                                                                                                                                                       CGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCCACGACCT
                                                                                                                                                                                                                                                                                                         ANÁCCTTCATGACAÁAAACGGTATTCÁAATTATCCGCTCATCGCGCGTTCCACAAGGTTT
                                                                                                                                                                                                                                                                                                                                                         ecrearccareccecacionaries crescretos de la consecución del consecución de la consecu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCAGAATTTAATATTGAAAATATTAAAGGTGATGCTCTTCCGACAGTACAAATCGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCCGAGTTCGACATCAAGCAGATCAGCAGC-----CTGCCCCAGGTGGACATCGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACACTTGTTGAAGGCAAACCATATTGGTTTAGACAATCTGTTAAACGTCATACCAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATGGTGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTAACTAAAGGCATTAACATTCATACAAATGCTTTTGTAAGCCAATGGGGTGCTTTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATCTTGTTGTTCATACTGATAAACCAATCGTACTTGTTGGCTCAATGCGCCCCATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCCGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTCGATGGCATCGTCATCACCCATGGCACCCGACACACCCTGGAAGAAACCCGCCTACTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACTGACAAGGAATTATTACAAATTGCTCGTCAAGTAAATGAACTTGTTAAAAAAGCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATTCAAGATTTGGCGAATGTATCTGGTATCCAAGCATTACAAGTAGCTTCTGAAAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGTGCAACTTATACGGCGGCAAAAGTTCCAGTTGATGCTTTAATCAATGCAGTTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAATGTTGTTGTCGCTACTGGCGGTACCATTGCTGGTGCTGGCGCAAGCTCAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACGTGGTGATCCTGGCCACCGGCGCACCATCGCCGGCGCTGGCGCCCAGCGCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                           GATTATTCATGCAGGTACAGGTAATGGTTCTGTAGCGAAATATATCGTTCCAACATTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGTTCTGACTCTATGCTTCCTGATGCTTATGAAGCATATGCAAAAGCTGGCGCTAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGGCCCCGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGATGCAAAAAATAAAGGCGTTATGGTTCTCATGAACGACTCTATTTTTGCTGCTCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCTCTTTCAGCAGATGGTCCACTTAACCTTTATAGTGCTGTTGCATTGGCCGCTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TĠTAAATGGCGTTGTGATTACACACGGTACAGATACTTTAGAAGAAACAGCATTTTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 273; DB 9; I
Pred. No. 3e-38;
0; Mismatches 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 9; Length 1125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                    . 980
                                                                                                                                                                                                                                                       920
                                                                                                  1094
                                                                                                                                                                                                    1034
                                                                                                                                                                                                                                                                                                                                                            860
                                                                                                                                                                                                                                                                                                                                                                                                                                                              803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    194
                                                                                                                                                                                                                                                                                                         974
                                                                                                                                                                                                                                                                                                                                                                                                           914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
```

```
RESULT 7
AAN70527
ID 70525-M
XX AAN77
XX AAN77
XX CAN7
D7 25-M
D7 25-M
D7 25-M
D7 25-M
D7 25-M
D8 Sequ
D8 Sequ
D8 Sequ
D8 Sequ
R7 ETW
XX Enzy
YX Mew
PT 04-A
XX PPR 04-A
XX New
PT CAIC
XX New
PT CAIC
XX New
PT CAIC
XX Disc
XX Disc
XX Disc
XX Disc
XX Equ

밁
                 5
                                         뫄
                                                                 Ś
                                                                                            밁
                                                                                                                 S
                                                                                                                                         Query Match
Best Local S
Matches 554
                                                                                                                                                                                                           When E.carotovora SCRI 193 contg. plasmid pASN 32 was cultured, the celifree culture broth contained 11.19 LA units/ml with specific activity 53.34 units/mg of protein. These figures compare with 10.87 LA units/ml and 14.97 units/mg of protein for the currently used prodn. strain E.chrysanthemi NCPPB 1066. (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
or pasn 3
                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                       New recombinant plasmids coding carotovora, useful for treating
                                                                                                                                                                                                                                                                                                                                                        WPI;
                                                                                                                                                                                                                                                                                                                                                                              Atkinson
                                                                                                                                                                                                                                                                                                                                                                                                                           06-AUG-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-AUG-1986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 terminator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Erwinia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Enzyme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-MAR-2003
07-AUG-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAN70557 standard;
                                                                                                                                                                                                                                                                                   Disclosure; Fig 4; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-FEB-1987.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EP211639-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAN70557;
                                                                                                                                                                                                                                                                                                                                                                                                     (PUBL-)
                                                                                                                                                                                                                                                                                                                                                        1987-051784/08
                                                                                             728
                                                                                                                                          554;
                                                                     80
                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ce encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chrysanthemi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer
                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                    PUBLIC HEALTH LAB
                                                                                                                                                                                                                                                                                                                                                                             P,
                 GCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCT
                                                                 GCGCGGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCG
                                                                                            ATAAACTGCCCAATATCGTTATCCTGGCGACCGGCGTACAATTGCCGGCTCAGCGGCAA
                                                                                                                                                                                      2837 BP; 627 A; 665 C; 867 G;
                                                CGGGTACCCAAACCACAGGTTACAAGGCTGGCGCGCTTGGCGTGGATACGCTAATCAACG
                                                                                                                   AGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGCACCATCGCCGGCGCTGGCCCCA
  CTGTGCCTGAGGTGAAGAAACTGGCTAATGTGAAGGGGGGAGCAGTTCTCCAACATGGCCA
                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                              Minton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (revised)
(first en
                                                                                                                                                                                                                                                                                                                                                                                                                            85GB-00019753
                                                                                                                                                                                                                                                                                                                                                                                                                                                  86EP-00305984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag= c
/note= "claimed"
1772. .1789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= b
724. .1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA;
                                                                                                                                                                                                                                                                                                                                                                              Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .723
                                                                                                                                                    25.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      leukaemia
                                                                                                                                                                                                                                                                                                                                                                               Gilbert
                                                                                                                                                                                                                                                                                                                                                                                                     SERVICE BOARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       with
                                                                                                                                          0,
                                                                                                                                         Score 261.6; DB 1
Pred. No. 2.7e-36;
0; Mismatches 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ВP
                                                                                                                                                                                                                                                                                                          for L-asparaginase - malignancies and new
                                                                                                                                                                                                                                                                                                                                                                              뛴;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       L-asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    therapy;
                                                                                                                                                                                       678 T; 0 U; 0 Other;
                                                                                                                                                               DB 1;
                                                                                                                                           424;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (EA)
                                                                                                                                           Indels
                                                                                                                                                                Length 2837;
                                                                                                                                                                                                                                                                                                          esp. from Erwinia transformed hosts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        activity
                                                                                                                                          18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in
                                                                                                                                          Gaps
                                                                                                                                                                                                                 field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PASN
                                               847
                                                                      139
                                                                                             787
                                                                                                                      79
   907
                                                                                                                                          N
```

S

CCGAAAGCATCACCAACGACGTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCG

```
RRESULT 8
AAXX8283
ID AAXX8
XX AAXX8
AC AAXX8
DT 30-J
XX L-88
XX L-88
XX L-88
XX Unid
XX CN12
XX OS Unid
XX CN12
XX OS-D
PD 08-D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   श्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                र्
                                                                                                                                                                                                                                                                                                              30-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                        AAX82834;
                                                                                                                                                                                                                                                                                                                                                                                                                                        AAX82834
   08-DEC-1999
                                                             CN1237633-A.
                                                                                                                                                                                L-asparaginase,
                                                                                                                                                                                                                                                 L-asparaginase DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320
                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACGGGATGATGTGGTGTGGTGATCACCCACGGGACCGACACGGTGGAAGAGTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGAT 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCTTAACCCCGGCACATGCCCGCATTCTGTTGATGCTGGCATTGACTCGCACCAGTGATC 1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATGCGCAAGGCGATGGAGAAAGGCGTTGTTGTGATCCGTTCTACCCGCACAGGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAAAGGTATCGTCTATGCCGGTATGGGCGCAGGTTCAGTGTCCGTTCGCGGTATTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAAGGCGCTGATGCCGGCCACCGGCAATGGCTGGTGGTGGTGGTGGTGGTGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCTTTATGGCTATCAGGATGACCCGGAATATCTGTATGACGCGGCTATCCAGCATGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCATACCACCCGGTCTGTGTTCGACGTGCGTGGCCTGACTTCGCTGCCGAAAGTCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCACACGCTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGCTACCTGGGCGTCATTATTGGTAACCGCATTTACTACCAAAACCGTATCGACAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCCGGCAACGGCCATCAGTGCTGACGGCCCGATGAACCTGCTGGAAGCGGTACGCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            eccceecacecerare of contract c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCCTGGAAGAAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAAAGTCATTCAAGAGTATTTCCATACTTATTGAT 1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACA 976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTATTGTGCCGCCGGATGAAGAGCTGCCAG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCCCGCTACATCACCAAGACCAACGCCTCTACGCTGGATACGTTCAAGGCGAATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAA---GAGCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGGGTGACAAACAGTCTCGCGGTCGCGGCGTGATGGTTGCTTAATGATCGTATCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTACTTTCTTCATCTGACGGTAAAAAGTGACAAGCCAGTGGTGTTTGTCGCAGCGATGC
                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                          fermentation;
                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA; 1044 BP.
                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                          88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -GTCTGGTTTCTGACT 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                       문
                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 548; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This invention describes a novel L-asparaginase-producing recombinant bacteria and its fermentation culture method. The new cell is produced using standard recombinant techniques. The enzyme gene expressed in the cell is different from the reported enzyme gene in sequence, and its individual amino acid composition is also different. The culture medium adopted for culturing the new bacterial cells is cheap and easily available, and the fermentation process used to grow the cells and express the enzyme is simple and easy to implement. This sequence encodes an L-asparaginase which is described in the method of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1044 BP; 274 A; 281 C; 272 G; 217 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Fig 2; 12pp; Chinese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New structured L-asparaginase bacterial host cell and its production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-1998;
                                   602
                                                                                          566
                                                                                                                                                       542
                                                                                                                                                                                                                    509
                                                                                                                                                                                                                                                                                 482
                                                                                                                                                                                                                                                                                                                                           449
                                                                                                                                                                                                                                                                                                                                                                                                        422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000-351194/31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INST MICROBIOLOGY CHINESE ACAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAACGTGGTGATCCTGGCCACCGGCGCACCATCGCCGGCGCCTGGCGCCAGCGCGGCA 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAACCTCGTGGAAAAAGACCGACAAGCCGATCGTCGTGGTGGTCGGTTCCCATGCGCCCCGGCA 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A---ATCTAACTACACAGCGGGTAAAGTTGGCGTAGAAAATCTGGTTAATGCGGTGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGG 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAATATCACCATTTTAGCAACCGGCGGGACCATTGCCGGTGGTGGTGACTCCGCAACCA
                                                                                          resecares residentes a la reserva de la reser
                                                                                                                                                                                             ACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCG---CCTGGGGCCCGC
                                                                                                                                                                                                                                                                                 AAGCCTCCGCTAATCGTGGCGTGCTGGTGGTGATGAACGACACCGTACTGGACGGTCGCG
                                                                                                                                                                                                                                                                                                                                           AGGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                           CGTCCATGAGCGCAGACGGTCCATTCAACCTGTATAACGCGGTAGTGACCGCAGCTGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCGACCTGACGGTGAAATGCGACAAACCGGTGGTGATGGTCGGCGCAATGCGCCCGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGTCGATGGCATCGTCATCACCCATGGCACCCGACACCCCTGGAAGAAACCGCCTACTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAACGATAATGTCTGGCTGACACTGGCGAAAAAAATTAAC----ACCGACTGCGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCCTGGCCGAGCTGGCCGACAGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTAAAAGACATTGCGAACGTTAAAGGCGAGCAGGTAGTGAATATCGGCTCCCAGGACA
                                   TGGGATACATTCACAACGGTAAGATTGACTACCAACGTACCCCGGCACGTAAGCACACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98CN-00102046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Meng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24.98;
55.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches 423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 252.2; DB 3; Pred. No. 1.2e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SCI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1044;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
```

Gaps

130

481

508

541

448

421

361 328

625

565

601

301

247

208 187

```
RESULT 9
AAT96346
ID AAT96346
AAT96347
AAT 9AT9
AAT 08-A
AX AAT9
AX AAT9
AX Immu
KW Im
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                  21-JUN-1988;
31-AUG-1992;
22-JUN-1993;
                                                                                                               self-protecting chimeric polypeptide comprising biologically sequence and single-chain antibody sequence - has resistance disrupting temperature, presence of proteolytic enzymes, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo
The present sequence is a chimeric gene containing the cDNA for the immunoglobulin (Ig) heavy and light chain variable regions of a murine anti-asparaginase II monoclonal antibody (MAb), and human asparaginase
                                                                                                                                                                                                 WPI; 1997-558200/51.
                                                                                                                                                                                                                                                                                                                                                                                                23-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US5686579-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAT96346 standard;
                                                                               Example 2; Col 27-30; 29pp; English.
                                                                                                                                                                                                                                                                              (HYBR-) HYBRISENS LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                    11-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 recombinant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Immunoglobulin; Ig; heavy chain; variable region; murine;
asparaginase II; monoclonal antibody; MAb; light chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAT96346,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCAGCGCATTTTCTGGGAATAC 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCCAGGACAGCAAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATCCATGCCGGCAACCGGCAATGGCTCGGTGGTGGTGGTGCCAGCCCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCAGCAGATCTTCAATCAGTAC 1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCAAAAAGCGCGCGTCCTGCTGCAGCTGGCTCTGACGCAAACCAAAGATCCGCAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCAGGATGCTGAAGTGGATGATGCGAAATACGGCTTCGTCGCCTCTGGCACGCTGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCTGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGCCGCGAAAAAACGGCACTGCAGTAGTGCGTTCTTCCCGGCGTACCGACGGGTGCTACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCTGCGCAAGAACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGTTAGCGCTGGTGTGGGTAATGGTAACCTGTATAAATCCGTGTTCGACACCCCTGGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTATGGCAACGTCACCGACACGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGATACGCCATTCGATGTCTCTAAGCTGAATGAGCTGCCGAAAGTCGGCATCGTTTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTACGCTAACGCATCCGATCTTCCGGCTAAAGCACTGGTAGATGCGGGCTATGATGGCA
                                                                                                                                                                                                                                     P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          containing anti-asparaginase MAb light and heavy chain
                                                                                                                                                                                                                                       Ramjeesingh
                                                                                                                                                                                                                                                                                                                  88US-00205748.
92US-00938505.
93US-00081410.
                                                                                                                                                                                                                                                                                                                                                                                                95US-00447422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA; 1848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polypeptide;
                                                                                                                                                                                                                                     ź
                                                                                                                                                                                                                                         EΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human;
                                                                                                                                        ូ
                                                                                                                                        e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        865
    S
                                          밁
                                                                       8
                                                                                                                     밁
                                                                                                                                                        Ş
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ពន្ធន្តន្តន្តន្តន្តន្តន្តន្តន្
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                     1463
                                                                                                                                                                                                                                                                                1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1163
                                                                                                                       1523
                                                                                                                                                                                                                                                                                                                                                           1343
                                                                                                                                                                                                                                                                                                                                                                                                                                        1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1049
                                                                                 746
                                                                                                                                                                                                                                                                                                                                                                                                509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                932
                                                                                                                                                                                                                                         626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89
                                          TCGTTAGCGCTGGTGTGGGTAACGGCAACCTGTATAAATCTGTGTTCGACACGCTGGCGA
                                                                               TGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCCAGCCCTGCAGG
      AGCTGCGCAAGAACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGC
```

```
polypeptide, comprising a lat region comprising a biologically active domain and another domain containing an epitope, linked via a polypeptide to a 2nd region including a single chain antibody (SCA) having the light and heavy chains of an antibody variable region which specifically binds the epitope in the lat region. The chimeric polypeptide assumes a conformation in which the SCA is bound to the epitope of the lst region and protects its biological activity from deactivation by denaturing temperatures or pH conditions, proteolytic enzymes, oxidising agents or alcohol. The regions of the chimeric polypeptide interact to form a structure analogous to an antibody-antigen complex. A L-asparaginase-SCA fusion protein of the above type has better trypsin resistance than free
```

Sequence 1848 BP; 435 A; 498 29 CCAACGTGGTGATCCTGGCCACCGGCGCACCATCGCCGGCGCTGGCGCCAGCGCGCCA Similarity GCGACACGCCATTCGATGTCTCTAAGCTGAATGAACTGCCGAAAGTCGGCATTGTTTATA TCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACA AGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTG CGTCTATGAGCGCAGACGGTCCATTCAACCTGTATAACGCGGTAGTGACCGCAGCTGATA CCGCCATGTCCGCCGACGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACA 448 TGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCCGGCA AGACCGACGGCTTCGTCATTACCCACGGTACCGACACGATGGAAGAAACTGCTTACTTCC 1162 ACGTCGATGGCATCATCACCCATGGCACCGACACCCTGGAAGAAACCCGCCTACTTTT 328 AGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCA 208 A---ATCTAACTACACAGTGGGTAAAGTTGGCGTAGAAAATCTGGTTAATGCGGTGCCGC ACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGG 148 CCAATATCACCATTTTAGCAACCGGCGGGACCATTGCCGGTGGTGGTGACTCCGCAACCA ACTACGCTAACGCATCCGATCTTCCGGCTAAAGCACTGGTAGATGCGGGCTATGATGGCA 1582 GCTATGGCAACGTCACCGACACGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGC TGGGCATGGTGGTAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGG ACGTCACCAAAACCAACACCACCGACGTAGCGACCTTCAAGTCTGTTAACTACGGTCCTC ACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCG---CCTGGGGCCCCGC TGAACGATAATGTCTGGCTGACACTGGCGAAAAAAATTAAC-----ACCGACTGCGATA 1102 TCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATG <u>AACTAAAAGACATTGCGAACGTTAAAGGCGAGCAGGTAGTGAATATCGGCTCCCAGGACA</u> TGGGTTACATTCACAACGGTAAGATTGACTACCAGCGTACCCCGGCACGTAAGCATACCA 1462 Conservative 23.7%; 0 Score 240.8; DB 2; Pred. No. 1.1e-32; C; 517 G; 398 T; 0 U; 0 Other; Mismatches 432; Indels Length 12; Gaps 388 1048 745 1522 685 625 1402 565 1342 508 1282 1222 268 988 931 88

```
ACH94955
ID ACH94
ACH9495
ID ACH94
AC ACH94
ACH94
AC ACH94
A
                           밁
                                                       र्
                                                                                                   밁
                                                                                                                                           १
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 543, Conserv
                                                                                                                                                                                                                                                                                                        The invention describes a new isolated nucleic acid encoding a Klebsiella pneumoniae polypeptide. Also described are: a recombinant expression vector comprising the nucleic acid, operably linked to a transcription regulatory element; and a cell comprising the recombinant expression vector. The nucleic acid is useful for preparing a vaccine composition egainst Klebsiella pneumoniae. This sequence encodes a Klebsiella pneumoniae in the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New nucleic acid encoding a Klebsiella pneumoniae polypeptide, preparing a vaccine composition against Klebsiella pneumoniae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Recombinant expression vector; transcription regulatory element; Klebsiella pneumoniae protein; antibacterial; Vaccine; gene; ds.
                                                                                                                                                                                                                                                                    Sequence 1071 BP; 229 A; 281 C; 338 G; 223 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; SEQ ID NO 730; 932pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-JAN-2000; 2000US-00489039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-AUG-2003.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Klebsiella pneumoniae polynucleotide seqid 730.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACH94935 standard,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; ABO61384.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI, 2003-895346/82.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Breton GL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-JUL-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACH94935,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GENO-) GENOME THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1823
                             145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             926
                                                                 73
                                                                                                         85
                                                                                                                                               13
                                                                 GGCGCCAGCGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCAGGATGCCGAAGTGGATGATGCGAAATACGGCTTCGTCGCCTCTGGCACGCTGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGCCGCGAAAACCGGTACTGCAGTCGTGCGTTCTTCCCGCGTACCGACGGGCGCTACCA 1702
                           GCGGCCAGCAATACCCAAACAACCGGCTATAAAGCCGGGGGGGATTGGGGTGCAGACGCTG
                                                                                                                                                  AACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACCATCGCCGGCGCT 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCAGCAGATCTTCAATCAGTACTAA 1848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAAGGAGC 985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCGTAACGCCGAGCAGCCGACGACGAGAAGAACGACTGGGTCGTGGCCCACGACCTGAACC
                                                                                                         AGCGAGACGCGTCTTCCGCATATTGTTATTTTAGCCACCGGCGAACGATTGCTGGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGCAAAAAGCGCGCGTTCTGCTGCAACTGGCTCTGACGCAAACCAAAGATCCGCAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Osborne
                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0117747P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA;
                                                                                                                                                                                                         23.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1071
                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORP
                                                                                                                                                                                                           Score 240.4; DB 11;
Pred. No. 1.3e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΒP
                                                                                                                                                                                      Mismatches 441; Indels 18;
                                                                                                                                                                                                                         Length 1071;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      useful
                                                                                                                                                                                      Gaps
                                                                 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1762
                                                                                                         144
                           204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         925
      RESULT 11
AAX03474
ID AAX03
XX
AC AAX03
XX
DT 30-AE
XX
Wolir
XX
L-aeg
XW malig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                         日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
L-asparaginase; amplification; treatment; disease; asparagine depletion; malignant disease; haematology; lymphoma; leukaemia; myeloma; AIDS;
                                                                                                                                                  AAX03474;
                                                                                                                                                                                        AAX03474
                                                                                                         30-APR-1999
                                                                                                                                                                                                                                                                                                                                 970
                                                                                                                                                                                                                                                                                                                                                                         970
                                                                                                                                                                                                                                                                                                                                                                                                             910
                                                                                                                                                                                                                                                                                                                                                                                                                                                        925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133
                                                                                                                                                                                      standard; DNA; 1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGCCGGCGTGCCGAGCTGGCCGACCTGGCCAATGTGCGCCGGCGAGCAGGTGATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTAACGCCGTGCCGGAAATGAGTAAAATCGCTCACGTCGAGGGCGAGCAGGTGGCCAAT 264
                                                                                                       (first entry)
                                                                                                                                                                                        ВP
```

```
Wolinella succinogenes L-asparaginase DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCAAGCGCCACACGGTCAACTCCGAGGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCTGGG---GCCGGCTGGGCATGGTTGGGAAGGCAAGTCGTACTGGTTCCGCCTGCCG
                                                                                                                                                                                                                                                                                                                                                          AAAGATCCGCAGCTGATTCAGCAATATTTCCATACCTACTGA 1071
                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCAGCGGCGTCGTACCGCCGGATGACAGCCAGCCCG-------GGTTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTG 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ĠĪĠĠŦĠĀŤŦAŦŦŤĀŦĠĠŦŤĀĊĊAĠĠĀĊĠAŦĊĊĠĠĀĠŦAŦAŦĠŤĀĊĠĀŦĠĊĠĠĊĠAŦĊĠĊĊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATAAAATTCACACGCTGCGCTCGGTGTTCGATGTGCGTCAGCTGAAGGTTCTGCCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCGAGGAGGGCTATCTTGGTGTCGTGGTGGGCGGAAAACCCCCAGTTCGAGACGCGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCGGCGCGCGCGCTTTGTCACCAAAACTAATGCCACTTCGCTGGATACCTTCCGGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   eccereeccaecaacaacaacroecececaaaeeecerecreereaccareaaceaceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGATGCGCCCGGCGACGGCGATCAGCGCCGACGGCCGATGAACCTGCTGGAAGCGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTG 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGTCGGT 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTATTGGCTCGGGACGATGTCGATGGCGTGGTGATCACCCATGGCACGGACACGCTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ĠĊĊĠĀĊŦĊĊĊŢĊĀĀĊĊĊĠĠĊĀĀĀĀĠĊĠĊĠŦĀŦĀĊŦĠĊŦĠĀŦĠĀĊĊĠĊĠĊŤĠĀĊĠĊĀĠĀĊŦ 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACC 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGGTCGCCGATCCTGATGCCCGGGGACGCGGGTAATGGTGGTGCTTAACGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAACCCCGTATTTCCTCAATCTGACGGTGAAAAGCAACAAGCCGGTGGTCTTTACCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAA 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTIGGCAGTGAGAATATGACCAGCGATATTATTCTCCAGCTCTCGAAGCGGGTGAATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  444
```

```
δ
                                                            밁
                                                                                         Ś
                                                                                                                            밁
                                                                                                                                                         Ś
                                                                                                                                                                                         밁
                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                   श्च
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 specifically rheumatoid arthritis, systemic lupus erythematosus and acquired immune deficiency syndrome, in humans or other mammals. The asparaginase can also be used for the covalent modification of biologically active proteins by acylation which is used to alter pharmacokinetic and immunogenic properties of biologically active proteins by acylation which is used to alter pharmacokinetic and immunogenic properties of biologically active proteins, and can be applied to any protein used to treat animal, human or plant diseases. The asparaginase can be used to treat patients who have become hypersensitive to other microbial asparaginases. The asparaginase has reduced toxicity and reduced tendency to cause immunosuppression or allergy, particularly it has no effect on spleen and thymus histology or lymphocyte marker distribution and no hepatotoxicity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This sequence is a novel L-asparaginase gene from Wolinella succinogenes which is used in a method for the treatment of diseases that respond to asparagine depletion. This asparaginase and its analogues, are particularly used to treat (i) malignant diseases, particularly where haematological and specifically lymphoma, leukaemia and myeloma (in either chronic or acute phases) and (ii) autoimmune diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           autoimmune disease; rheumatoid arthritis; systemic lupus erythematosus; covalent modification; acylation; pharmacokinetic; immunogenic; spleen; hypersensitive; reduced toxicity; immunosuppression; allergy; thymus; lymphocyte marker distribution; hepatotoxicity; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Treating diseases responsive to asparagine depletion - especially cancer and auto-immune diseases, using a Wolinella succinogenes asparaginase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-JUN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1999-070295/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wolinella succinogenes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (CHIL-) CHILDRENS HOSPITAL LOS ANGELES.
                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
425
                              329
                                                              365
                                                                                              269
                                                                                                                              305
                                                                                                                                                              209
                                                                                                                                                                                             245
                                                                                                                                                                                                                             149
                                                                                                                                                                                                                                                             188
                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                           521;
                                                                                                                                                                                                                                                                                           89
                                                                                                                                                                                                                                                                                                                                                           29
                                                                                                                                                  TCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATG
                                                                                                                                                                                              CCATCAACGÁCCTAGCCÁCCATCAAGGGTGÁACÁGATCTCAAGCÁTTGGCTCCCAÁGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1133
                                                                                                                              TGACGGGTAAGGTGTGGCTTAAACTAGCCAAGCGTGTCAATGAGCTCCTCGCCCAAAAAG
                                                                                                                                                                                                                           AGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCA
                                                                                                                                                                                                                                                                                    ACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGG
                                                                                                                                                                                                                                                                                                                           CCCAAGTGACTATCCTAGCCACAGGAGGCACCATCGCTGGTTCGGGGGAATCTAGCGTCA
                                                                                                                                                                                                                                                                                                                                                          ccaacerearccreeccacceececarccarceceececreececaccaecececca
                                TGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGGTTCCCATGCGCCCCGGCA 388
                                                              AGACCGAAGCCGTGATCACCCCATGGAACTGACACCATGGAAGAGACCCGCTTTCTTCC
                                                                                              ACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTACTTTT
                                                                                                                                                                                                                                                             AGAG---TAGCTACTCTGCTGGAGCAGTCACCGTTGATAAGCTTCTTGCAGCCGTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pig
                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6; 58pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97US-0049085P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98WO-US011905
                                                                                                                                                                                                                                                                                                                                                                                                                                                        315 A; 305 C; 267 G;
                                                                                                                                                                                                                                                                                                                                                                                                         21.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    English
                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                        Score 219; DB
Pred. No. 6.4e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                        246 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                           460; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1133;
                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                             187
                                                                                              328
                                                                                                                                                                                                                             208
                                                                                                                                                                                                                                                                                             148
                                                                                                                                                                                                                                                                                                                                                             88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
 484
                                                                424
                                                                                                                              364
                                                                                                                                                              268
                                                                                                                                                                                              304
                                                                                                                                                                                                                                                             244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                Durden
```

```
ARCESULT 12
AACC2512
ID AACC2
XX AACC2
XX O7-FE
XX AASPAR
XW 1euka
XX WOlin
PN WO200
XX WO200
XX 12-OC
PF 24-MA
XX O2-AP
XX O2-AP
XX OLICAE
PA (CHIL
PA (CHIL
                                                                                                                                24-MAR-2000;
                                                                                                                                                                        12-OCT-2000
                                                                                                                                                                                                                                                 Wolinella succinogenes
                                                                                                                                                                                                                                                                                                                                                                                      07-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                          AAC62512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAC62512 standard; DNA; 1133
                                                                                             02-APR-1999;
                                                                                                                                                                                                              WO200059533-A1
                                                                                                                                                                                                                                                                                                         Asparaginase; glutaminase;
                                                         (CHIL-) CHILDRENS HOSPITAL LOS ANGELES
                                                                                                                                                                                                                                                                                     leukaemia; DNA insert;
                                                                                                                                                                                                                                                                                                                                             succinogenes asparaginase-specific DNA insert.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTCCATGAGTGCTGATGGCCCCATGAATCTCTATAACGCCGTGAATGTAGCGATCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGCCATGTCCGCCGACGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACA 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCAGCGCATTTTCTGGGAATACTGAT 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCAAGAGGCTGAAGTGGATGATAAGAAACTTGGTTTTGTGGCTACAGAGAGTCTCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCTGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGCAGCCAAATCAGGCGTAGTCGTCGCTCGAAGCTCTAGAGTGGGCAGTGGTTCCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCCCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCÁCCCCGÁTGATÁCTGÁTGTTTTAGTCÁÁTGCAGCCCTTCÁGGCAGGAGCCÁÁAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACA 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAA---GAGCGCCTGGGGCCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ÄAĞCÜTÜTACTAACAAAĞĞAĞTĞĞTĞATTGTĞATĞAACĞATĞAĞATTCACĞCCĞCCAĞAĞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAAAAGATCTTCTCCACCTATTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCAAAAAGCCAGAGTGCTTCTTATGTTAGCCCTCACCAAAACTAGTGATAGAGAGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCCAGGACAGCAAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGCGCAAGAACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCATCCATGCAGGCATGGGCAATGGGAACCCTTTCCCTTTGACTCAAAATGCTCTTGAAA 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGCAAGTGAGTTTGATATTAGCAAAATCGAAGAACTCCCCCAGAGTCGATATTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGGCACAGTCTATTATGGCAAAGTCGAGTATTTCACTCAATCCGTTCGACCTCACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGGCATGGTGGTAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGCGACCAAGCTCAACCACCGCAGTCAATGCATTTGCTTCGCCCAACACAGGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTG
                                                                                                                                2000WO-US007981.
                                                                                                                                                                                                                                                                                                                                                                                  (first entry
                                                                                             99US-0127662P.
                                                                                                                                                                                                                                                                                                         autoimmune disease; graft versus host disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       604
```

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 521; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention relates to a novel method of using the recombinant microbial enzymes asparaginase and glutaminase to treat autoimmune diseases and leukaemia. The diseases likely to respond to such treatment include graft versus host disease, rheumatoid arthritis, systemic lupus erythematosus, autoimmunity, collagen vascular diseases, AIDS, osteoarthritis, Issac's syndrome, psoriasis, diabetes, multiple sclerosis, sclerosing panencephalitis, rheumatic fever, inflammatory bowel disease, primary billiary cirrhosis, chronic active hepatitis, glomerulonephritis, myasthenia gravis, pemphigus vulgaris and Graves' disease. The present sequence is DNA insert used to demonstrate the method of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1133 BP; 315 A; 305 C; 267 G; 246 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 5; Fig 6; 72pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Treating or preventing graft versus host and autoimmune diseases, e.g. diabetes, rheumatoid arthritis, that responds to asparagine or glutamine depletion comprises administering an asparaginase or glutaminase.
989
                                                                                                                                                                665
                                                                                                                                                                                                                   995
                                                                                                                                                                                                                                                                         605
                                                                                                                                                                                                                                                                                                                              509
                                                                                                                                                                                                                                                                                                                                                                                 545
                                                                                                                                                                                                                                                                                                                                                                                                                                       449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000-664963/64
                                                                                                        626
                                                     725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAAGCA
GCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCGAAGGCGC
                                                                                                                                                                                                                                                                                                                                                                                 AAGCCTCTACTAACAAAGGAGTGGTGATTGTGATGAACGATGAGATTCACGCCGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAACCTCACGGTGAAAAAGCCAAAAAACCTGTCGTCCTTGTAGGCGCCATGCGTCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGTCGGTCCGTTCCATGCGCCCCGGCA 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACGGGTAAGGTGTGGCTTAAACTAGCCAAGCGTGTCAATGAGCTCCTCGCCCAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCATCAACGACCTAGCCACCATCAAGGGTGAACAGATCTCAAGCATTGGCTCCCAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCAAGTGACTATCCTAGCCACAGGAGGCACCATCGCTGGTTCGGGGGAATCTAGCGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccaacgregreaticcregccaccegcegcaccarcegcegcegcregccaccegcca
                                                     TTGCAAGTGAGTTTGATATTAGCAAAATCGAAGAACTCCCCAGAGTCGATATTCTTTACG
                                                                                                        TCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACA
                                                                                                                                                              TCGGCACAGTCTATTATGGCAAAGTCGAGTATTTCACTCAATCCGTTCGACCTCACACCC
                                                                                                                                                                                                                   TGGGCATGGTGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGC
                                                                                                                                                                                                                                                                         AAGCGACCAAGCTCAACACCACCGCAGTCAATGCATTTGCTTCGCCCAACACAGGTAAAA
                                                                                                                                                                                                                                                                                                                         ACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAA---GAGCGCCTGGGGCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                   AGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTCCATGAGTGCTGATGGCCCCCATGAATCTCTATAACGCCGTGAATGTAGCGATCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGACCGAAGCCGTGATCATCACCCATGGAACTGACACCATGGAAGAGACCGCTTTCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTACTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAG---TAGCTACTCTGCTGGAGCAGTCACCGTTGATAAGCTTCTTGCAGCCGTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 219; DB 3; 1
Pred. No. 6.4e-29;
0; Mismatches 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
745
                                                                                                           685
                                                                                                                                                                                                                   625
                                                                                                                                                                                                                                                                         664
                                                                                                                                                                                                                                                                                                                              565
                                                                                                                                                                                                                                                                                                                                                                                                                                       508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             88
                                                     784
                                                                                                                                                                                                                                                                                                                                                                                 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         244
                                                                                                                                                                724
```

र् 밁 र् 밁 र्

र् 밁 ક 밁 र्

785

844

Claim 2; Page 22-23; 29pp; Russian

음 성

밁 र् В र् 문 र् 밁 र् 밁 ફ 밁

```
RESULT 13
ABZ80801
ID ABZ80801
XX ABZ80
XX ABZ80
XX ABZ80
XX Pacto
DT 27-OC
DT 27-OC
DT 27-OC
DT 27-OC
DT 27-OC
DT 27-OC
CS Pecto
XX Pecto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-OCT-2003
30-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABZ80801 standard;
                                              a L-asparaginase protein useful diseases of the blood.
                                                                                                                                                                                                                                        Eldarov MA,
Sidoruk KV,
                                                                                                                                                                                                                                                                                                                                                                               22-AUG-2001;
04-APR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Erwinia carotovora L-asparaginase gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABZ80801;
                                                                  New isolated Erwinia carotovora L-asparaginase gene useful
a L-asparaginase protein useful for treating malignant and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    06-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   primer_bind
                                                                                                                                             P-PSDB; ABP98615
                                                                                                                                                                 WPI; 2003-268418/26.
                                                                                                                                                                                                             Skryabin
                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-AUG-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO2003018742-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pectobacterium
                                                                                                                                                                                                                                                                                                            (UCHR=)
                                                                                                                                                                                                                                                                                                                                  (UCHR=)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           746
                                                                                                                                                                                                                                                                                                          ည်
လူ
                                                                                                                                                                                                               ត្ត
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCCCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCAAAAGATCTTCTCCACCTATTAAT 1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCAAGAGGCTGAAGTGATAAGAAACTTGGTTTTGTGGCTACAGAGAGTCTCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCGTAACGCCGAGCAGCCGACGACAAGAACGACTGGGTCGTGGCCCCACGACCTGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCATCCATGCAGGCATGGGCAATGGGAACCCTTTCCCTTTGACTCAAAATGCTCTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCAGCGCATTTTCTGGGAATACTGAT 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCAAAAAGCCAGAGTGCTTCTTATGTTAGCCCTCACCAAAACTAGTGATAGAGAGGCGA 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCTGCGCAAGAACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGCAGCCAAATCAGGCGTAGTCGTCGCTCGAAGCTCTAGAGTGGGCAGTGGTTCCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             asparaginase; cytostatic; blood; acute lymphoblastic leukemia.
                                                                                                                                                                                                                                                                                                          UCHREZHDENIE NI INST BIOMED KHIMII.
UCHREZHDENIE TSENTR BIOINZHENERIYA.
                                                                                                                                                                                                             Zhgun AA, G
Sveshnikova
Sokolov NN;
                                                                                                                                                                                                                                                                                                                                                                               2001RU-00123442.
2002RU-00108505.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2002WO-RU000405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 carotovorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= a
/product= "L-asparaginase"
/EC number= "3.5.1.1"
48. 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /bound_moiety=
1078. .1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bound_moiety= "primer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA; 1174
                                                                                                                                                                                                               Ŋ
                                                                                                                                                                                                                                                            Gervaziev YV,
                                                                                                                                                                                                                                        Ψ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ВÞ
                                                                                                                                                                                                                                          Borisova
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "primer
                                                                                                                                                                                                                                      Aleksandrova SS, AA, Omelnyuk NM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C204"
                                                                                                                                                                                                                                        Bogush VG;
Archakov
                                                                         for producing nonmalignant
                                                                                                                                                                                                                                        AI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           286
```

X8888888XX

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This sequence represents a DNA fragment coding for an Erwinia carotovora L-asparaginase. The invention also includes a homogeneous preparation of a mature form of L-asparaginase produced by expression of the DNA in a bacterial strain and has low affinity for L-glutamine. The L-asparaginase protein encoded by the DNA is useful for treating malignant and non-malignant diseases of the blood (e.g. acute lymphoblastic leukemia). (Updated on 27-OCT-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                            857
                                                                                                                          797
                                                                                                                                                                          835
                                                                                                                                                                                                                        737
                                                                                                                                                                                                                                                                           775
                                                                                                                                                                                                                                                                                                                      677
                                                                                                                                                                                                                                                                                                                                                                                                                       617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20
                                                                                                                                                                                                                                                                                                                                                                                                        GCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAATCTACCTAACATTGTCATTCTGGCAACAGGCGGTACGATTGCCGGTTTCGGCAGCA
GTTTCGTGCTGCGTAACGCCGAGCAGCCCG
                                                                                                                                                                          TAAAAGGCATCGTGTATGCGGGCATGGGTGCAGGCAGCGTATCCAAGCGCGGCGACGCTG
                                                                                                                                                                                                                           CCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGTTATCTGGGCGTGATTATCGGTGACAAAATATACTACCAGACCCGTCTGGATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCGGATAAAAACTCCCGCGGTCGCGGTGTACTGGTCGTGCTGAACGACCGCATTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCT 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCAATACGCAAACCACTGGGTAAAAGCGGGTTGCGCTTGGGCGTAGAGACGCTGATTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGCACCATCGCCGGCGCGCTGGCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1174 BP; 290 A; 284 C; 313 G; 287 T; 0 U; 0 Other;
                                                                            GCATCCGTAAAGCGGAAAGCAAAGGCATTGTTGTCGTACGTTCCAGCCGTACCGGCAGCG
                                                                                                                          TCGCCTACAGCTATGGCAACGTCACCGACACGCCCTACAAGGCCCTGGCACAGAACGGCG
                                                                                                                                                                                                                                                                                                                                                                         TTCACACCACGCGTTCCGTGTTTGATGTGACCAACGTTGATAAGCTGCCGAAAGTCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGCCCGTTTCATCAGCAAAACCAACGCCTTTACGTTGGATACCTTTAAAGCGCCAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAA---GAGCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAACGGCAATCCAGTG---CCCGACGGCCCGATGAACCTGTACGGTGCAGTAAAAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCCCGGCACCGCCATGTCCGCCGACGCCATGCTCAACCTGTACAACGCCGTGGCCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTATTTTCTGAACCTGACGGTGAAAAGCGACAAGCCAGTAGTCTTTTGCGATGCGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTACTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACGCAGCGATGTTGATGGCGTGGTCATTACGCACGGTACGGATACGCTCGACGAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGAAAATATGACCAGCGATGTGTTAACGCTGAGCAAGCGCGTGAACGAGCTGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGTGCCTGAGCTGAAAAACGCTTGCCAATATCAAAGGTGAGCAGCTTGCCAGCATCGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGCGGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCG
                                                                                                                                                                                                                                                                        TTATTTATGGTTATCAGGACGATCCAGAATATATGTATGACGCCTCTATCAAACACGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 209.2; DB 8; Pred. No. 3.2e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 393; Indels
                            886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               177
                                                                                                                          856
                                                                                                                                                                          894
                                                                                                                                                                                                                           796
                                                                                                                                                                                                                                                                                                                      736
                                                                                                                                                                                                                                                                                                                                                                       774
                                                                                                                                                                                                                                                                                                                                                                                                                       676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79
```

8 8 8 8 8

ঠ

8 8 8 8

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

밁

```
RESULT 14
ABD07233/c
ID ABD07733/c
XX ABD077
XX ABD077
XX DF Pseud
XX Bacte
KW Bacte
KW antill
OS Pseud
XX US655
XX US655
XX IS-FE
XX IS-F
                                S
                                                                                        뭐
                                                                                                                                       á
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to Pseudomonas aeruginosa polypeptides and the polymucleotides encoding them. The sequences are useful in diagnosis and conternal conditions, as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from a bacterial infection, for evaluating a compound, such as a polypeptide, for the ability to bind a P. aeruginosa nucleic acid, as components of effective antibacterial targets, as trargets for antibacterial drugs, including anti-P. aeruginosa drugs, as templates for recombinant components for diagnosis and/or treatment of P. aeruginosa-caused components for diagnosis and/or treatment of P. aeruginosa-caused infection, and in detection of P. aeruginosa sequences or other sequences of Pseudomonas species using biochip technology. Sequences ABD01397-ABD17967 represent P. aeruginosa polymucleotides of the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic format from USPTO at components.
                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7233/c
ABD07233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from bacterial infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 270 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; SEQ ID NO 5837; 455pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2003-615309/58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rubenfield MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US6551795-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               antibacterial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacterial infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pseudomonas aeruginosa polynucleotide #5837.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABD07233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GENO-) GENOME
                                                                                                                                                                                                          270
                                   441
                                                                                                                                                381
                                                                                                                                                                                                                                                            321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 955
                                                                                                                                                                                                                                                                                                                       230;
                                                                                                                                                                                                                                                                                                                                                  Similarity
CAGCAACAAGGACTCGCGCGGCGAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTC
                                                                                        CCCGGGCACCGCGATGTCCGCCGACGCATGCTCAACCTGTACAACGCCGTGGCGGTGGC
                                                                                                                                             CCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGC
                                                                                                                                                                                                       CTACTTCCTGACCCTGGTCGAGCACACCGAGAAGCCTATCGTGGTGGTCGGCTCGATGCG
                                                                                                                                                                                                                                                            standard; DNA; 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTATCGTCCCACCGGATGCAGGCCAACCCG
                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THERAPEUTICS CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0074788P.
98US-0094190P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-00252991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nolling
                                                                                                                                                                                                                                                                                                                                                                                                                                 39 A; 92 C; 85 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                                                                                                                                                                               20.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene; ds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ģ
                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Deloughery C,
                                                                                                                                                                                                                                                                                                                                               Score 207.2;
Pred. No. 7.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pseudomonas aeruginosa infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                 54 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 984
                                                                                                                                                                                                                                                                                                                                               2e-27;
                                                                                                                                                                                                                                                                                                                                                                      DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bush
                                                                                                                                                                                                                                                                                                                 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ö
                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                               380
                                                                                                                                                440
                                                                                                                                                                                                       211
                                   500
                                                                                           151
```

S

```
ADDOTT 15
ADDOTT
AC ADDOTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                   CC asparaginase. The cDNA was isolated from a cDNA library on the basis of CC homology to Saccharomyces cerevisiae asparaginase II. The enzyme shows CC optimal activity at pH 7 (at 37 degrees C) and 60 degrees C (pH 7.0) and CC is stable in the pH range from about 4.0 to 8.0. It has a molecular CC weight of 40-65 kDa (SDS-PAGE). A claimed method of reducing the CC formation of acrylamide during heat treatment of raw material comprising CC carbohydrate, protein and water involves treatment of the raw material CC with an enzyme prior to heat treatment. The enzyme may be an CC asparaginase, including A. oryzae asparaginase, that is capable of CC reacting on asparagine or glutamine (optionally substituted). The method CC is useful for preparing a heat-treated product (claimed) such as potato CC products, potato chips, breakfast cereals, biscuits, roasted nuts, hot CC cakes, pancakes, etc.
Query Match
Best Local Similarity 56.
Matches 445, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Preparing heat-treated product such as potato chips by providing raw material having carbohydrate, protein and water, treating raw material with enzyme reacting on asparagine or glutamine and heat treating to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 11; SEQ ID NO 1; 46pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Budolfsen G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Aspergillus oryzae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADC07178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADC07178 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              reduce water content.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-OCT-2002; 2002DK-00001547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10-OCT-2003; 2003WO-DK000684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO2004032648-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Asparaginase; enzyme; acrylamide; heat treatment; gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Aspergillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2004-340772/31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90
                                                                                                                           1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCGCTGGGCATGGTGGTGGAAGGCAAG 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGCCGCGACGAGGAGGATGGTCAACATCAAGACCGTAGAGGCGTTCAAGAGCCCGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGCGACAAGTCGGCACGCGGCAAGGGCGTGCTGATCACCATGAACGACGAGATCCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              oryzae asparaginase coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                        BP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jensen MT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= a
/product= "Asparaginase"
/EC_number= "3.5.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                        303 A; 421 C; 305 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA, 1303
                              20.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Heldt-Hansen HP,
   Score 205.6; DB 12;
Pred. No. 1.3e-26;
0; Mismatches 334;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽P
                                                                                                                        274 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Stringer MA,
         Indels
                                                             Length 1303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lange
      9;
      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    91
      ű,
```

```
976
                                  799
                                                                         916
                                                                                                            739
                                                                                                                                                 856
                                                                                                                                                                                     679
                                                                                                                                                                                                                          796
                                                                                                                                                                                                                                                             619
                                                                                                                                                                                                                                                                                                    739
                                                                                                                                                                                                                                                                                                                                     559
                                                                                                                                                                                                                                                                                                                                                                           679
                                                                                                                                                                                                                                                                                                                                                                                                                502
                                                                                                                                                                                                                                                                                                                                                                                                                                                   619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAACAAGGACTCGCGCGGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGGAAATGCTAAACGTTGCCAACGTCGCTGGCGTGCAAGTAACCAATGTCGGCAGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCAGGA
                                                                                                                                                 CTCTACTCATACGAAGACATGCACAATGACACCCTTTACTCCGCCATCGACAACGGCGCA
                                                                                                                                                                                  GCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCC
                                                                                                                                                                                                                                                           CACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATC
                                                                                                                                                                                                                                                                                                                                     egcccecreegcaregreereeaaaegcaaerceracreerrcceccreeccaaecec
                                                                                                                                                                                                                                                                                                                                                                                                            GGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAG---AGCGCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGAGCCCCAAGGCCCGAGACCGCGGCGCCCTGATTGTCATGAACGACCGCATCGTATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccceecacceccarercceccaaceecarecrcaaccrearcaaceacecereecece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCTTCCTCGACGCCACGGTCAACTGTCGCAAGCCCGTGGTCATCGTCGGCGCCCATGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACCCCACCATGGCCGGTGCAGTGGTCACCCACGGCACCGGACACGCTCGAAGAATCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA---TGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACATCACCTCCGACATTCTCCTGCGTCTCTCCAAACAGATCAACGAGGTGGTCTGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCCAAACGTCACTATCTTCGCGACAGGCGGCACAATCGCGGGCTCCAGCGCCGACAAC
 ATGGAAGA
                                                                         AAGGGCATCGTTATCGCCGGCTCCGGCTCCGGCTCCGTCTCCACCCCCTTCAGCGCCGCC
                                                                                                          AAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCC
                                                                                                                                                                                                                          CCAACAGGCAAGACGGAAGTAGATATCCGGAACATCACCTCCATCCCCAGAGTCGACATC
                                                                                                                                                                                                                                                                                                                                                                          GCCTTCTACGCCTCCAAGACGAACGCCAACACCGTCGATACATTCAAGGCCATCGAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTTCAACCGCCATCTCGGCTGACGGCCCCCTCAACCTCCTGCAATCCGTCACCGTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCGCAACAACAGGTTÁCAAAGCCGGTGCAGTCGGCATCCAGACACTGATCGACGCGGTC
983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           144
                                                                                                                                                                                                                                                               678
                                                                                                                                                                                                                                                                                                                                       618
                                                                                                                                                                                                                                                                                                                                                                                                                558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                   915
                                                                                                                                                                                                                          855
                                                                                                                                                                                                                                                                                                  795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    204
                                                                           975
                                                                                                                                                                                     738
                                                                                                                                                                                                                                                                                                                                                                                                                                                     678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          264
                                                                                                            798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   321
```

음 성 음

S

8 8 8 8 8 8 8 8

δ

Search completed: March 22, 2005, 10:31:22 Job time : 664 secs **경** 음

**청** 유

 名 品

중 음

Ihis Page Blank (uspto)

Run

Sequence: Scoring table:

Perfect score: Title:

1014

Sequence

15462,

1, Appli
1565, Ap
1565, Ap
1616, Ap
1616, Appli
1, Appli
792, App
831, App

US-09-842-628-1

Sequence

Appli Appli Appli Appli Appli Appli

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1202784 seqs, 818138359 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    March 22, 2005, 07:01:33 ; Search time 216 Seconds (without alignments) 7681.410 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 aaggaagtggagaaccagca.....ttttctgggaatactgataa 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Issued_Patents NA:*

1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*

2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*

3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*

4: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*

5: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compus
5 PCT-US92-10421-1
3 US-08-050-482A-1
4 US-09-252-991A-5793
4 US-09-252-991A-5773
4 US-09-252-991A-5336
1 US-08-447-422-15
4 US-09-489-039A-730
3 US-09-252-991A-5837
4 US-09-557-884-1
4 US-09-557-884-1
4 US-09-543-681A-1219
3 US-09-103-840A-2
3 US-09-103-840A-2
1 US-09-522-991A-5838
1 US-09-103-840A-2
1 US-09-103-840A-2
3 US-09-103-840A-2
1 US-09-252-991A-10316
US-09-252-991A-10316
US-09-252-991A-10316
US-09-902-540-6505
US-09-902-540-6505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2405568
Sequence 5838, Ap
Sequence 925, App
Sequence 791, App
Sequence 1293, Ap
Sequence 1298, Ap
Sequence 8780, Ap
Sequence 8780, Ap
Sequence 10546, A
Sequence 10316, A
Sequence 8997, App
Sequence 6505, Ap
                                                                                                                                                                                                  Sequence 1, Appli
Sequence 5793, Ap
Sequence 5793, Ap
Sequence 5877, Ap
Sequence 2376, Ap
Sequence 15, Appl
Sequence 15, Appl
Sequence 730, Ap
Sequence 730, Ap
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1219, Ap
Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US92/10421
FILING DATE: 19921204
CLASSIFICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: DE P4140003.8
FILING DATE: 04-DEC-1991
ATTORNEY/AGENT INFORMATION:
NAME: Kagan, Satah A
REGISTRATION NUMBER: 32,141
REFERENCE/DOCKET NUMBER: 00100.41200
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-508-9100
FILIEPHAX: 202-508-9299
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 1
PCT-US92-10421-1
                                     PCT-US92-10421-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      იი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application:
                                                     HYPOTHETICAL: NO ANTI-SENSE: NO ORIGINAL SOURCE: ORGANISM: PSEU
                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 1014 base pairs
TYPE: NUCLEIC ACID
STRANDEDNESS: double
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Roberts, Joseph
APPLICANT: MacAllister, Thomas W
APPLICANT: Sethuraman, Natarajan
APPLICANT: Freeman, Nobie G
TITLE OF INVENTION: GENETICALLY ENGINEERED GLUTAMINASE AND
TITLE OF INVENTION: ITS USE IN ANTIVIRAL AND ANTICANCER THE
                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: Banner, Birch, STREET: 1001 G Street N.W. CITY: Washington, D.C. COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application PC/TUS9210421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44666664444
                                                                                                                      DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1268
1268
1268
1268
1268
1268
1392
5392
5392
5392
5392
1512
1512
1612
1614
49225
49225
2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                        7A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-403-852D-2
US-08-51.0-646B-2
US-09-231-818-2
US-09-635-359B-2
US-09-635-359B-1
US-08-51.0-646B-1
US-09-231-818-1
US-09-252-991A-1551
US-09-252-991A-1616
US-09-252-991A-792
US-09-252-991A-792
US-09-252-991A-831
US-09-252-991A-831
US-09-252-991A-831
US-09-252-991A-837
US-09-252-991A-15371
US-09-252-991A-15371
US-09-252-991A-15462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        McKie and Beckett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
Sequence
```

THERAPY

Result No.

Score

Query Match

Length

멂

a G 000

1014 983.4 742 742 562.2 273 240.8 219 207.2 138 138

100.0 97.0 73.2 73.2 55.4 55.4 26.9 23.7 23.7

963 1005 1002 1104 11425 1425 1753 1758 3120

Query Match

100.0%;

Score 1014;

멂 <u>ن</u>

Length 1014;

Database

Minimum DB Maximum DB

seq length: 0 seq length: 2000000000

```
Best Local Similarity 100.0%; Pred. No. 1e-209; Matches 1014; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                     TCACGTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCAGCCCGACGACAAGAACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGAAGTGGAGAAACCAGCAGAAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGCACC
                                                            ACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGATAA 1014
                                                                                                      ACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGATAA 1014
                                                                                                                                                                                               TGGGTCGTGGCCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATG
                                                                                                                                                                                                                                                                                                                                                           CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCCTGCCGGCCAAGGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGTAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGTGGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACCACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCGACAAGCTGATTGCCGGCGTGCCGGAAGCTGGCCGACCTGGCCAATGTGCGCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCGCCGGCGCTGGCGCCAGCGCGAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC 120
                                                                                                                                                                                                                                           TCACGTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGAC
                                                                                                                                                                                                                                                                                                                                 CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                               960
                                                                                                                                                                                                                                                                                       900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                           ठ
                                                                                 밁
                                                                                                                    8
                                                                                                                                                                       밁
                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; SEQUENCE DESCRIPTION: SEQ ID NO: US-08-050-482A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-050-482A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/08050482A Patent No. 6312939
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: (202) 672-5309
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1017 base pairs
TYPE: nucleic acid
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 1003; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIP: 20007-5109

COMPUTER READABLE FORM:

MEDIUM TYPE: Ploppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.

CURRENT APPLICATION DATA:

APPLICATION UNMBER: US/08/050,482A

FILING DATE: 25-Apr-1995

CLASSIFICATION: «Unmber: WO PCT/US92/10421

PILING DATE: 04-DEC-1992

ATTORNEY/AGENT IMPORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: ROBERTS, JOSEPH
MACALLISTER, Thomas W.
SETHURAMAN, Natarajan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: DNA (genomic) FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Bent, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 023032/0106
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY & LARDNER
STREET: 3000 K Street, N.W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 22
                                       241
                                                                                   181
                                                                                                                             181
                                                                                                                                                                                                                      121
                                                                                                                                                                          121
                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                   GTCGACAAGCTGATTGCCCGGCGTGCCGGAGCTGGCCCGACCTGGCCAATGTGCGCCGAG
                                                                                                           CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                          ATCGCCGGCGCTGGCGCCAGCGGCCCAACAGCGCCACCTACCAGGCTGCCCAAGGTTGGC 120
                                                                                                                                                                                                                                                                                                                                                         AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTCGCCACCGGCGCACC
                                  AGCGTGGCCGAGCTGGCCACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                                       GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                  ATCGCCGGCGCTGGCGCCAGCGCGAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                  AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: CDS
LOCATION: 1..1011
                                                                                 CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACCTGCTCAAGCTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FREEMAN, Abbie G.
OF INVENTION: GENETICALLY ENGINEERED GLUTAMINASE AND
OF INVENTION: ITS USE IN ANTIVIRAL AND ANTICANCER THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (202) 672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 983.4; DB 3;
Pred. No. 4.1e-203;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1017;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
T
                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                       300
                                                                                                                             240
                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                     60
300
                                                                                   240
                                                                                                                                                                          180
```

S

301

밁 5 문 8 밁 र्

241 241 181 181 121 121 밁

S 밁

61 61

μ

RESULT

N

961

밁 S 문 ş 밁 ક

901 901 841 841 781 781 721 721 661 661 601 601 541 541 481 481 421 421 361 361 301

ð

밁 र् 밁 ঠ 닭 8 밁 Ś 밁 र् 문 S 용

밁

```
APPLICANT: MARC J. Rubenfield et al.
APPLICANT: MARC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SE
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS ANI
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 5793
LENGTH: 1182
TYPE: DNA
ORGANISM: Beudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                               RESULT 3
US-09-252-991A-5793
                               US-09-252-991A-5793
                                                                                                                                                                                                                                                                Sequence 5793, Application Patent No. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenf
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                               961
                                                                                                                                                                                                                                                                                                                                                                                                                           958
                                                                                                                                                                                                                                                                                                                                                                                                                                                            901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACTGGGTCGTGGCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCA 957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCTTCAAGAGCGCCTGGGGCCCGGCTGGGCATGGTGGTGGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGTGGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                               ATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGATAA 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACTGGGTCGTGGCCCACGACCTGAACCCCGCAGAAGGCCCCGCATCCTGGCGATGGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCCACGTCAACCAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                  Rubenfield et al.

NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
73
.2%;
                                                                                                                                                                                                                                                                                                                  US/09252991A
Score
 742;
 멂
 4
                                                                                                                                                                                                                                      AND THERAPEUTICS
Length 1182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                          S
                                                                                                           문
                                                                                                                                   8
                                                                                                                                                                      문
                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                묽
                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
RESULT
                                                                                                                                                                                                   S
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 83.9 Matches 851; Conservative
                                               1129
                                                                                                           1069
                                                                                                                                                                         1009
                                                                                                                                          898
                                                                                                                                                                                                       841
                                                                                                                                                                                                                                      949
                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                     688
                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                829
                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                               769
                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      μ
                                                                                                                                     GACTGGGTCGTGGCCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCA
                                                                                                                                                                                                                                                        CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                               CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGTGCGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCGCCGGCGCTGGCCCAGCGCCGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGAAGTCGCACCGCAACAGAAACTGTCCAACGTGGTCATCCTGGCCACCGGCGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC
                                                                                                                                                                                                                                                                                                                                                                CTGGCTCCGGTGGAAATCGCCTACAGCTACGGCAACGTCAGCGACACCGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                CGCGCACCGGTGAAGCGGCACACGGTGAACTCCGAGTTCGACATCAAGCAGATCTCCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGTTCAAGAGCCCGTGGGGCCCCGCTGGGCATGGTCGAGGGCAAGAGCTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAACGACGAGATCCTCTCCGGCCGCGACGCGAGCAAGATGGTCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACAACGCCGTGGCGGTGGCCGGCGACAAGTCGGCACGCGGCAAGGGCGTGCTGATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ĠŦĠĠŦĠĠŦĊĠĠĊŦĊĠĂŦĠĊĠĊĊĠĠĠĊĄĊĊĠĊĠĀŦĠŦĊĊĠĊĊĠĄĊĠĠĊĄŦĠĊŦĊĄĄĊĊŦĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACACCCTGGAAGAGACCGCCTACTTCCTGACCCTGGTCGAGCACACCGAGAAGCCTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCGTCGCCAAGCTGGCCGATAGCGACGACGACGGCATCGTGATCACCCACGGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGGTGTTCCAGATCGCCTCGGAAAGCTTCACCAACGAGAACCTGCTGGAACTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCGACCAGTTGCTGGCCAGCGTGCCGCAGCTCAAGGACATCGCCAACGTCCGCGGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCGCCGGCGCGCCAGCGCCGCCAACAGCCCACCTACACCGCCGCCAAGGTGCCG
                                                 ATGACCAAGACCCAGGACAGCAAGGAGCTGCAACGGATCTTCTGGGAATACTGA 1182
                                                                     ATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGGAATACTGA 1011
                                                                                                              GACTGGATCGTCGCCCACGACCTGAACCCGCAGAAGGCGCGCATCCTGGCCGCGGTCGCG
                                                                                                                                                                         TCGCACGTCAATGCCGGCGTTCGTCCTGCGCAACGCCGAGCAGCCGGACGACAAGAAC
                                                                                                                                                                                                     TCAC---GTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCGACGACAAGAAC
                                                                                                                                                                                                                                                                                                     CTGGCCCAGGCCGGCGAAGGCGATCATCCATGCCGGCACCGGCAACGGCTCGGTGCCC
                                                                                                                                                                                                                                      83.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 5.3e-151;
0; Mismatches 160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                         1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                        897
                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             348
```

648

480

708

588

420

528 360 468

240

408

288

228 60

1128

948 780 888

720

828 660 768

밁 र्

र्

음 衫

8 밁 ঠ 밁 र् B र् 밁 ठ 밁 S 밁 र् 밁 र् 밁 ð

밁

```
US-09-252-991A-5877/c
Sequence 5877, Application US/09252991A
PARENT NO. 6551, Application US/09252991A
GENERAL INFORMATION:
                                                             망
                                                                                          र्
                                                                                                                                  문
                                                                                                                                                           S
                                                                                                                                                                                              밁
                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                  ર્ક
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-252-991A-5877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: AUCLEIC ACID AND ANINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AURUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 5877
LEUGTH: 1335
TYPE: DNA
ORGANISM: Beudomonas aeruginosa
ORGANISM: Beudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                              661
                                                               639
                                                                                                 601
                                                                                                                                                                    541
                                                                                                                                                                                                         759
                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                              819
                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                 879
                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                    939
                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC
                  CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                       CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                               GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGTGGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                            TACAACGCCGTGGCGGTGGCCGGCGACAAGTCGGCACGCGGCAAGGGGCTGCTGATCACC
                                                                                                                                                                                                                                                                                                         GACACCCTGGAAGAAACCGCCTACTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAAGTCGCACCGCAACAGAAACTGTCCAACGTGGTCATCCTGGCCACCGGCGCGCACC
                                                                 CGCGCACCGGTGAAGCGGCACACGGTGAACTCCGAGTTCGACATCAAGCAGATCTCCGCG
                                                                                                                                      GCGTTCAAGAGCCCGTGGGGCCCGCTGGGCATGGTGGTCGAGGGGCAAGAGCTACTGGTTC
                                                                                                                                                                                                         ATGAACGACGAGATCCTCTCCGGCCGCGACGCGAGCAAGATGGTCAACATCAAGACCGAA
                                                                                                                                                                                                                                           ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                 GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                    GACACCCTGGAAGAGACCGCCTACTTCCTGACCCTGGTCGAGCACCACCGAGAAGCCTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCGTCGCCAAGCTGGCCGATAGCGACGACGTCGACGGCATCGTGATCACCCACGGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGGTGTTCCAGATCGCCTCGGAAAGCTTCACCAACGAGAACCTGCTGGAACTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCGACCAGTTGCTGGCCAGCGTGCCGCAGCTCAAGGACATCGCCAACGTCCGCGGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCGCCGGCGCCGCCAGCGCCGCCAACAGCGCCAACCTACACCGCCGACCAAGGTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCGCCGGCGCTGGCGCCAGCGCCAACAGCCCCACCTACCAGGCTGCCAAGGTTGGC
CTGGCTCCGGTGGAAATCGCCTACAGCTACGGCAACGTCAGCGACACCGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 742; DB 4; Length 1335; Pred. No. 5.4e-151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches 160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1180
                                                                 580
                                                                                                   660
                                                                                                                                                                                                         700
                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1060
520
                                  720
                                                                                                                                      640
                                                                                                                                                                      600
                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                              760
                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                  820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
```

```
S
                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TYPE: DNA ; ORGANISM: Pseudomonas aeruginosa US-09-252-991A-5773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
US-09-252-991A-5773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         무
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                     밁
                                                                              S
                                                                                                                     밁
                                                                                                                                                     S
                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
FRIOR APPLICATION NUMBER: US 60/074,788
PRIOR PRILING DATE: 1998-02-18
PRIOR PRILING DATE: 1998-07-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR PILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 5773
LENGTH: 2748
TYPE: NUMBER: US 60/094,190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 5773, Application US/09252991A
Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    640;
                                                                                                                        241
                                                                                                                                                                                                                          444
                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             519
                     624
                                                                                     564
                                                                                                                                                        504
                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                             384
                                                                                                                                                                                                                                                                                                                                                   324 CTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCC 383
                                                                                                                                                                                                                                                                                                                                                                                                                      264 CAATGACGTCGATGGCATCGTCATCACCCATGGCACCCGACACCCCTGGAAGAAACCGCCTA 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                               CGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCGAG
GGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTA
                                                                                                                                                        GCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCCTGGGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGGGCATGGTGGTCGAGGGCAAGAGCTACTGGTTCCGCGCACCGGTGAAGCGGCACAC
                                                                                   GCTGGGCATGGTGGTAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACAC
                                                                                                                                                                                        CGACAAGTCGGCACGCGCAAGGGCGTGCTGATCACCATGAACGACGAGATCCTCTCCGG
                                                                                                                                                                                                                          CAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGG
                                                                                                                                                                                                                                                                                                                             CTTCCTGACCCTGGTCGAGCACACCGAGAAGCCTATCGTGGTGGTCGGCTCGATGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                               CGACGACGTCGACGCCATCGTGATCACCCCACGGTACCGACACCCTTGGAAGAGACCGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGACCAAGACCCAGGACAGCAAGGAGCTGCAACGGATCTTCTGGGAATACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACTGGATCGTCGCCCACGACCTGAACCCGCAGAAGGCGCGCATCCTGGCCGCGGTCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACTGGGTCGTGGCCCACGACCTGAACCCCGCAGAAGGCCCCGCATCCTGGCGATGGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGCACGTCAATGCCGGCGGCTTCGTCCTGCGCAACGCCGAGCAGCCGGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCAC---GTCAACAGGGCGGTTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGCGCGTGGTGCCGACCCTGCAGGAACTGCGCAAGCAGGGCGTGCAGATCATCCGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGCCCAGGCCGAGGCGATCATCCATGCCGGCACCGGCACGGCTCGGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGCACAGAACGGCGCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55.4%;
85.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 562.2; DB 4;
Pred. No. 4e-112;
0; Mismatches 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2748;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             460
                     683
                                                       360
                                                                                       623
                                                                                                                                                        563
                                                                                                                                                                                                                            503
                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                               443
                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                        300
                                                                                                                                                                                            240
```

```
RESULT 6
US-09-328-352-2336
# Sequence 2336, Application
# Patent No. 6562958
                                                                                                                                                                           ક
                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        윰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                          $
                                                                                8
                                                                                                          8
                                                                                                                                                 밁
                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           / TYPE: DNA
/ ORGANISM: Acinetobacter baumannii
US-09-328-352-2336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: GARY L. Breton et al.
APPLICANT: GARY L. BRETON et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUWANNII FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT PILING DATE: 1999-06-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 8252
SEQ ID NO 2336
LENGTH: 1125
                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 557; Conser
                   435
                                                 330
                                                                                                                                                                                    210
                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                        195
                                                                                                                                                                                                                                                                                                                                                         135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                       90
                                                                                                                                                                                                                                                                                                                                                                                          30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAA
                                                 GAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCCGGCAC 389
                                                                                                         CGTCGATGGCATCGTCATCACCCATGGCACCGCCTGGAAGAAACCCGCCTACTTTTT
                                                                                                                                                                                  CACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCAATGA
                                                                                                                                                                                                                     AATTCAAGATTTGGCGAATGTATCTGGTATCCAAGCATTACAAGTAGCTTCTGAAAGTAT
                                                                                                                                                                                                                                                   GCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCAT
                                                                                                                                                                                                                                                                                    TAGTGCAACTTATACGGCGGCAAAAGTTCCAGTTGATGCTTTAATCAATGCAGTTCCTCA
                                                                                                                                                                                                                                                                                                                    CAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGGA
                                                                                                                                                                                                                                                                                                                                                       CAATGTTGTTGTTGTCGCTACTGGCGGTACCATTGCTGGTGCTGGCGCAAGCTCAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                        CAACGTGGTGATCCTGGCCACCGGCGCGCACCATCGCCGGCGCTGGCGCCAGCGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGCTGCGCAAGAACGGCGTGCAGATCATTCGTTCAC---GTCAACAGGGCGGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCCAGCCCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGCTACGGCAACGTCAGCGACACCGCCTACAAGGCCCTGGCCCAGGCCGCGAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGAACTCCGAGTTCGACATCAAGCAGATCTCCGCGCTGGCTCCGGTGGAAATCGCCTA
                 ANATCTTGTTGTTCATACTGATAAACCAATCGTACTTGTTGGCTCAATGCGCCCCATCAAC
                                                                                                                                                   TACTGACAAGGAATTATTACAAATTGCTCGTCAAGTAAATGAACTTGTTAAAAAGCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGCTGCAACGGATCTTCTGGGAATACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACCCGCAGAAGGCGCGCATCCTGGCCGCGGTCGCGATGACCAAGACCCAGGACAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGTCCTGCGCAACGCCGAGCCGGACGACGACGACGACTGGATCGTCGCCCACGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAACTGCGCAAGCAGGGCGTGCAGATCATCCGCTCCTCGCACGTCAATGCCGGCGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGC
                                                                                    TGTAAATGGCGTTGTGATTACACACGGTACAGATACTTTAGAAGAAACAGCATTTTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                        26.9%;
ilarity 56.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/09328352
                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                        Score 273; DB 4; Length 1125;
Pred. No. 8.4e-50;
0; Mismatches 425; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                 329
                                                                                                                                                   374
                                                                                                                                                                                    269
                                                                                                                                                                                                                                                                                                                       149
                                                                                                                                                                                                                                                                                                                                                       194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                  434
                                                                                                                                                                                                                     314
                                                                                                                                                                                                                                                     209
                                                                                                                                                                                                                                                                                      254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            743
                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 7
US-08-447-422-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 19
Patent No.
                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: SHAMI, Ezekiel Y.
                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/447,42
                                                                                                                                             ZIP: 20007-5109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                      APPLICANT: SHAMI, Ezekiel Y.
APPLICANT: ROTHSTEIN, Aser
APPLICANT: RAMJESSINGH, Mohabir
FILING DATE:
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: Use of P
                                                                                                                                                                                                ADDRESSEE: Foley & Lardner STREET: 3000 K Street, N.W CITY: Washington, D.C. COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             390
                                                                                                                                                                                                                                                                                                                                                                                                      5, Application US/08447422
5686579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGTGCTGCGTAACGCCGAGCAGCACGACGACGACAAGAACGACTGGGTCGTGGCCCACGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGC 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCCATGTCCGCCGACGCCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAMATTCAACGCATGTTCTGGCAGTACTAA 1125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAATCCTCAAAAAGCGCGTCTTCTTGCGGCGTTGGCACTTACCAAAACCAACGATGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAAGACCCAGGACAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTATTACGTGATGCAGAACAACCTGACTCTAAATATGGTTGGGTAGCAGCTCATGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAACCTTCATGACAAAAACGGTATTCAAATTATCCGCTCATCGCGCGTTCCACAAGGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATTATTCATGCAGGTACAGGTAATGGTTCTGTAGCGAAATATATCGTTCCAACATTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 eciearccareccecaccacaareccicerricererececeserecieccaecciceca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGTTCTGACTCTATGCTTCCTGATGCTTATGAAGCATATGCAAAAGCTGGCGCTAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCCGAGTTCGACATCAAGCAGATCAGCAGC-----CTGCCCCAGGTGGACATCGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGGTGGTAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGGCCCGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATGCAAAAAATAAAGGCGTTATGGTTCTCATGAACGACTCTATTTTTTGCTGCTCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCTCTTTCAGCAGATGGTCCACTTAACCTTTATAGTGCTGTTGCATTGGCCGCTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCAGAATTTAATATTGAAAATATTAAAGGTGATGCTCTTCCGACAGTACAAATCGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACACTTGTTGAAGGCAAACCATATTGGTTTAGACAATCTGTTAAACGTCATACCAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTAACTAAAGGCATTAACATTCATACAAATGCTTTTGTAAGCCAATGGGGTGCTTTGGG
                                                                                                                                                                                                                                                                                                  Use of Antibody/Antigen Interactions
Protect or Modulate Biological Activ
                                                                                                                                                                                                                                                                                        15
 S
                                                                  US/08/447,422
 08/081,410
                                                                                                                                                                                                                                     Suite
                                                                                                  Version
                                                                                                   #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       734
```

```
PILING DATE: 22-JUN-12-
APPLICATION NUMBER: US 07/938,505
FILING DATE: 31-AUG-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/205,748
FILING DATE: 21-JUN-1988
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REGISTRATION NUMBER: 17923/102
REFERENCE/DOCKET NUMBER: 17923/102
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                         밁
                                                                                                                                                                               S
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                     र्
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (202)672-5399
TELEX: 904136
INFORMATION FOR SEQ ID NO: 15
SEQUENCE CHARACTERISTICS:
LENGTH: 1848 base pairs
TYPE: nucleic acid
STRANDENESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (202)672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
mes 542; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                         1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1223
                                                                                                                            1463
                                                                                                                                                                                                                                                                                                                                                                                      1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1049
                                                                                                                                                                                         626
                                                                                                                                                                                                                                                                                                                         566
                                                                                                                                                                                                                                                                                                                                                                                                                                                   509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAACGTGGTGATCCTGGCCACCGGCGGCGCACCATCGCCGCGCGCTGGCGCCAGCGCCGCCA
                                                                GCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGC 745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCGGCCGACAGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTAAAAGACATTGCGAACGTTAAAGGCGAGCAGGTAGTGAATATCGGCTCCCAGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A---ATCTAACTACACAGTGGGTAAAGTTGGCGTAGAAAATCTGGTTAATGCGGTGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAATATCACCATTTTAGCAACCGGCGGGACCATTGCCGGTGGTGGTGACTCCGCAACCA
ACTACGCTAACGCATCCGATCTTCCGGCTAAAGCACTGGTAGATGCGGGGCTATGATGGCA 1582
                                                                                                                                GCGACACGCCATTCGATGTCTCTAAGCTGAATGAACTGCCGAAAGTCGGCATTGTTTATA
                                                                                                                                                                                             TCAACTCCGAGTTCGACATCAAGCAGATCAGCCGGCCTGCCCCAGGTGGACATCGCCTACA
                                                                                                                                                                                                                                                             TGGGTTACATTCACAACGGTAAGATTGACTACCAGCGTACCCCGGCACGTAAGCATACCA
                                                                                                                                                                                                                                                                                                                      тееесатестестесалееслаетсстастесттсе сстессе сслаес с с поста с
                                                                                                                                                                                                                                                                                                                                                                                          ACGTCACCAAAACCAACACCACCGACGTAGCGACCTTCAAGTCTGTTAACTACGGTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCG----CCTGGGGCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGCCTCCGCCAACCGTGGCGGCGTGCTGGTAGTGATGACACCGTGCTTGATGGCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGTCTATGAGCGCAGACGGTCCATTCAACCTGTATAACGCGGTAGTGACCGCAGCTGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cceccaterccecceaceecatecrcaaccteracaacecereeccereeccaecaaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGGTCCGTTCCATGCGCCCCGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACCGACGGCTTCGTCATTACCCACGGTACCGACACGATGGAAGAAACTGCTTACTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACGTCGATGGCATCGTCATCACCCATGGCACCCGACACCCTGGAAGAAACCGCCTACTTTT 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAACGATAATGTCTGGCTGACACTGGCGAAAAAAATTAAC-----ACCGACTGCGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23.7%;
ilarity 55.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 240.8; DB 1;
Pred. No. 8.4e-43;
0; Mismatches 432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HYLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1848;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12;
                                                                                                                                                                                                                                                             1462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1162
                                                                                                                                                                                             685
                                                                                                                                                                                                                                                                                                                                                                                          1402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           931
                                                                                                                                                                                                                                                                                                                             625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              988
```

```
NUMBER OF SEQ ID NOS: 14342
SEQ ID NO 730
LENGTH: 1071
TYPE: DNA
CRCANISM: Klebsiella pneumoniae
US-09-489-039A-730
                           δ
                                                                            닭
                                                                                                          S
                                                                                                                                                           片
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 8
US-09-489-039A-730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence 730, Application US/09489039A
Patent No. 6610836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/489,039A CURRENT FILING DATE: 2000-01-27 PRIOR APPLICATION NUMBER: US 60/117,747 PRIOR FILING DATE: 1999-01-29 NUMBER OF SEQ ID NOS: 14342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Gary Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                    313
                                                                                                                                                                                                                                                                                    193
                                                                                                                                                                                                                                                                                                                                                                                                             145
                                                                                                                                                                                                     253
                                                                                                                                                                                                                                             265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACCATCGCCGGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                           GCGGCCAGCAATACCCAAACCACCGGCTATAAAGCCGGGGCGATTGGGGTGCAGACGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGTTAGCGCTGGTGTGGGTAACGGCAACCTGTATAAATCTGTGTTCGACACGCTGGCGA 1642
                                                                                                                    GAAAACCGCCTACTTTTGAACCTCGTGGAAAAAGACCGACAAGCCGATCGTCGTGGTCGGT 372
                                                                                                                                                                                    CTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCCATGGCACCGGACACCCTGGAA 312
                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCCCAGCGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCGAGACGCGTCTTCCGCATATTGTTATTTTAGCCACCGGCGGAACGATTGCTGGTTCG 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCAGGATGCCGAAGTGGATGATGCGAAATACGGCTTCGTCGCCTCTGGCACGCTGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rearccarecceecacceecaareecrossrerorosceesiesiescaeccaeccriecaee 805
GCGATGCGCCCGGCGACGGCGATCAGCGCCCGACGGGCCGATGAACCTGCTGGAAGCGGTC
                                      TCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTG
                                                                              GAAACCCCGTATTTCCTCAATCTGACGGTGAAAAGCAACAAGCCGGTGGTCTTTACCGCG
                                                                                                                                                                                                                                             ĂTTGGCAGTGAGAATATGACCAGCGATATTATTCTCCAGCTCTCGAAGCGGGTGAATGCG
                                                                                                                                                                                                                                                                                  ATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAG
                                                                                                                                                                                                                                                                                                                            ATTAACGCCGTGCCGGAAATGAGTAAAATCGCTCACGTCGAGGGCGAGCAGGTGGCCAAT
                                                                                                                                                                                                                                                                                                                                                        ATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAG 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCAGCAGATCTTCAATCAGTACTAA 1848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCAAAAAGCGCGCGTTCTGCTGCAACTGGCTCTGACGCAAACCAAAGATCCGCAGCAGA 1822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAAGGAGC 985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCTGAACC 925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGCCGCGAAAACCGGTACTGCAGTCGTGCGTTCTTCCCGCGTACCGACGGGCGCTACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTGCGCAAGAACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCCGGTTTCGTGC 865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23.7%;
ilarity 54.2%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 240.4; DB 4;
Pred. No. 9.1e-43;
0; Mismatches 441;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1071;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1702
  504
                                        432
                                                                                                                                                                                                                                                                                      252
                                                                                                                                                                                                                                                                                                                              264
                                                                                                                                                                                                                                                                                                                                                                                                             204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      72
                                                                                444
                                                                                                                                                               384
                                                                                                                                                                                                                                             324
```

```
श्च
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       श्च
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            १
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
US-09-094-435-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 3, Application US/09094435 Patent No. 6251388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Donald
                                                                                                                                                                                  COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: PASTSEQ for Windows 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: DONBIG L Durden TITLE OF INVENTION: WTILIZ: TITLE OF INVENTION: ASPARAVITLE OF INVENTION: HEMATO! NUMBER OF SEQUENCES: 3
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/049,085
FILING DATE: June 9, 1997
                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette,
MEDIUM TYPE: storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth S
STREET: Suite 4700
CITY: Los Angeles
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                 APPLICATION NUMBER: US/09/0 FILING DATE: Filed Herewith CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: U.S.A. ZIP: 90071-2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATAAAATTCACACGCTGCGCTCGGTGTTCGATGTGCGTCAGCTGAAGGTTCTGCCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCCACGACCTGAACCCCGCAGAAGGCCCCGCATCCTGGCGATGGTGGCAATGACCAAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCAGCGGCGTCGTACCGCCGGATGACAGCCAGCCCG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACGACAAGAACGACTGGGTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGCCGGTATCAAAAAAAGCGCAGCAGCGGGGCATCGTGGTGGTGCGAGCCTCCCGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACGGCGCAAGGCGCTGATCCATGCCGGCAACCGGCAATGGCTCGGTGTCGTCGCGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGTGATTATTTATGGTTACCAGGACGATCCGGAGTATATGTACGATGCGGCGATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               grigaca recerta ca de cria regena a concese con consecuente de con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTGGG----GCCCGCTGGGCATGGTGGTAGGCAAGTCGTACTGGTTCCGCCTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACGGTCGCCGATCCTGATGCCCGGGGACGCGGGGTAATGGTGGTGCTTAACGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAGATCCGCAGCTGATTCAGCAATATTTCCATACCTACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCGACTCCCTCAACCCGGCAAAAGCGCGTATACTGCTGATGACCGCGCTGACGCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCGAGGAGGGCTATCTTGGTGTCGTGGTGGGCGGAAAACCCCCAGTTCGAGACGCGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCGGCGCGCGCCTTTGTCACCAAAACTAATGCCACTTCGCTGGATACCTTCCGGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCGTGGCCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UTILIZATION OF WOLINELLA SUCCINOGENES ASPARAGINASE IN THE TREATMENT OF HUMAN HEMATOLOGIC AND AUTOIMMUNE DISEASE
                                                                                                                                                                US/09/094,435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Street
                                                                                                                                                                                                                                                                                                                                                                       1.44 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               564
                                                5
                                                                                                                                 닭
                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                   片
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-094-435-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1133 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Warburg, Richard J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION: TELEPHONE: (213) 489-1600 TELEPAX: (213) 955-0440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Warburg, Richard J.
REGISTRATION NUMBER: 32,327
REFERENCE/DOCKET NUMBER: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPAX:
                                                              746
                                                                                                                                    785
                                                                                                                                                                                                       989
                                                                                                                                                                                                                                                                         725
                                                                                                                                                                                                                                                                                                                                    626
                                                                                                                                                                                                                                                                                                                                                                                                       665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29 CCAACGTGGTGATCCTGGCCACCGGCGGCACCATCGCCGGCGCTGGCGCCAGCGCCGGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCGACCAAGCTCAACACCACCGCAGTCAATGCATTTGCTTCGCCCCAACACACGGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCCAGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGTCGGTTCCATGCGCCCCGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACCGAAGCCGTGATCATCACCCATGGAACTGACACCATGGAAGAGACCGCTTTCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAG---TAGCTACTCTGCTGGAGCAGTCACCGTTGATAAGCTTCTTGCAGCCGTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGG 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCAAGTGACTATCCTAGCCACAGGAGGCACCATCGCTGGTTCGGGGGAATCTAGCGTCA
   TCATCCATGCAGGCATGGGCAATGGGAACCCCTTTCCCTTTGACTCAAAATGCTCTTGAAA
                                                           rgarccareccecaccecaareecrocerercerececeereccaeccaeccrecaec
                                                                                                                                    GCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGC
                                                                                                                                                                                                                                                                                                                                    TCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rececarecregades receases recessive r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAA---GAGCGCCTGGGGCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGCCTCTACTAACAAAGGAGTGGTGATTGTGATGAACGATGAGATTCACGCCGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ĊTTĊĊAŤĠAGTĠĊŢĠĂŢĠĠĊĊĊĊĂŤĠĂAŢĊŤĊŤĂŢĂĂĊĠĊĊĠŤĠAAŢĠŤĀĠĊĠĂŢĊĂĂĊĂ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAACCTCACGGTGAAAAGCCAAAAACCTGTCGTCCTTGTAGGCGCCCATGCGTCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAAACCGCCTACTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCATCAACGACCTAGCCATCAAGGGTGAACAGATCTCAAGCATTGGCTCCCAAGAGA
                                                                                                                                                                                                                                                                     TTGCAAGTGAGTTTGATATTAGCAAAATCGAAGAACTCCCCAGAGTCGATATTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                       TCGGCACAGTCTATTATGGCAAAGTCGAGTATTTCACTCAATCCGTTCGACCTCACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACGGGTAAGGTGTGGCTTAAACTAGCCAAGCGTGTCAATGAGCTCCTCGCCCAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             234/274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches 460; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 219; DB 3;
Pred. No. 3.8e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6
```

904

805

844 745 685

724

784

625

664 565 604 508 448 484 388 424 328 304 208 244

364

268

187

88

```
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 5837
LENGTH: 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-252-991A-5837/c
, Sequence 5837, Application
, Patent NO. 6551795
, GENERAL INFORMATION:
                                                                                                                                                                                    RESULT 11
US-09-557-884-1
                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: DNA
; ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-5837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
SULT 11
3-09-557-884-1
Sequence 1, Application US/UYYYYY
Sequence 10. 6506581
Patent NO. 6506581
PATENTION:
APPLICANT: Fleischmann et al.
APPLICANT: Fleischmann et al.
The OF INVENTION: the Haemophilus influenzae Rd Genome,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Marc J. Rubenfier TITLE OF INVENTION: NUCLEIC TITLE OF INVENTION: AERUGIN FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1025
                                                                                                                                                                                                                                                                                                       561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   905
                                                                                                                                                                                                                                                                                                                                                                                 501
                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                                                                                                             441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          230;
                                                                                                                                                                                                                                                                   30
                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                       CCCGCTGGGCATGGTGGTGGAAGGCAAG 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCCGGCACCGCCATGTCCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGC
                                                                                                                                                                                                                                                                                                                                                                                   CGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCAGCGCATTTTCTGGGAATACTGAT 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCGGGCACCGCGATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTACTTCCTGACCCTGGTCGAGCACCCGAGAAGCCTATCGTGGTGGTCGGCTCGATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                стасттттералсстсетераларассейска срассейтсетсетестестестеся
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCAAAAAGCCAGAGTGCTTCTTATGTTAGCCCTCACCAAAACTAGTGATAGAGAGGCGA 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAAGGAGC 985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCAAGAGGGTGAAGTGGATGATAAGAAACTTGGTTTTGTGGCTACAGAGAGTCTCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCTGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGCAGCCAAATCAGGCGTAGTCGTCGCTCGAAGCTCTAGAGTGGGCAGTGGTTCCACCA 964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTGCGCAAGAACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                         CGGCGACAAGTCGGCACGCGGCAAGGGCGTGCTGATCACCATGAACGACGAGATCCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCAAAAGATCTTCTCCACCTATTAAT 1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rubenfield et al.

NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/09252991A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 207.2; DB 4;
Pred. No. 9.7e-36;
0; Mismatches 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                      Fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             925
                                                                                                                                                                                                                                                                                                                                                                                   560
                                                                                                                                                                                                                                                                                                                                                                                                                                                             500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         865
                                                                                                                                                                                                                                                                                                                                             μ.
                                                                                                                                                                                                                                                                                                                                                                                                                       91
                                                                                                                          S
                                                                                                                                                                문
                                                                                                                                                                                                  S
                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-557-884-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        802735 ATCTTGGCAACGGGTGGTACCATTGCAGGAAGCGGGCAAAGTTCGGTAAA---TTCTGCG 802791
                                                                                                                                                                                                                                                                                                                           802966
                                                                                                                                                                                                                                                                                                                                                                                                       802912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   802852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            802792 TÁTAÁAGCTGGACÁATTAAGTATTGÁTÁCTTTAATTGAAGCTGTACCAGAAATGAAAAAT 802851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 20850
COMPUTER READABLE FORM:
MEDIUM TYPE: 3 1/2 inch diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REGISTRATION NUMBER: 41,9
REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 301-309-8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 08/476,102
FILING DATE: JUN-5-1995
ATTORNEY/AGENT INFORMATION:
NAME: Michelle S. Marks
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/557,884
FILING DATE: 25-Apr-2000
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: Human Genome Sciences,
STREET: 9410 Key West Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                     340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                             220
                                                                                                                                                                                                                                                                                                                                                                 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  474;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40 ATCCTGGCCACCGGCGCACCATCGCCGGCGCCTGGCGCCAGCGCCGACCACCACCC 99
                                                                                                                                                                                                                                                 GTAAAATGTGAAAAAACCGGTTGTTCTCGTTGGGGCAATGCGTCCTGCAACAGAAAAAAGT 8030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGAC 219
                                                                                          GGTCGTGGTGTTTTAGTCGCAATGAATAATGAAGTACTAGGTGCTCGCGATGTAACAAAA
                                                                                                                                                                                                                                                                                                                           TTTGTCATTACCCATGGTACAGATACCATGGAAGAGACGGCTTATTTCTTAGATTTAACC 803025
                                                                                                                                                                                                GCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                           GACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGC 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 1830121 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: Dell Pentium
OPERATING SYSTEM: MS DO
SOFTWARE: ASCII Text
                                                                                                                          GCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAG
                                                                                                                                                                    GCTGATGGCCCATTAAATCTTTACAATGCTGTCGTTGTCGCAGCAGACAAAAAATCAAGT
                                                                                                                                                                                                                                                                                   GAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCC
                                                                                                                                                                                                                                                                                                                                                               ATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                       GTCTGGCTAAAACTGGCAAAAGCCATCAATGCTCAATGTAAAAGTACT-----GATGGA 802965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGAC 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Rockville
STATE: MD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 301-309-8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Thereof,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <Ūnknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 138; DB 4;
Pred. No. 6.1e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 491; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and Uses Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             v6.22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PB186P3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ľ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1830121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
```

w ••

803205 519 803145

```
RESULT 12
US-09-643-990A-1
; Sequence 1, Application
; Patent No. 6528289
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
COMPUTER READABLE FORM:

MEDLIN TYPE: 3 1/2 inch diskette
COMPUTER: Dell Pentium
OPERATING SYSTEM: MS DOS v6.22
SOFTMARE: ASCII Text
CURRENT APPLICATION UNMERR: US/09/643,990A
PILING DATE: 23-Aug-2000
CLASSIFICATION : «Unknown»
PRIOR APPLICATION NUMBER: 08/487,429
PRIOR APPLICATION NUMBER: 08/487,429
PILING DATE: 1995-06-07
APPLICATION NUMBER: 08/426,787
PILING DATE: 1995-04-21
APPLICATION NUMBER: 08/426,787
PILING DATE: 1995-04-21
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           803686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                803446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          803386
                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Robert D. Fleischmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCGAAGACTTCTAAGA 803702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGTTGATGATAGTAAATATGGĆŤTTĞŤAĞCATČAGGTACTTTAAATCĆAČAGAAAĞĆČ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATAGCGTCGTTGTAGTCCGTTCTTCTCGTGTACCAACGGGTTATACAACTCGTGACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCACCTGTCGAACCATTAÁACGCATTACTCAÁTGCTGGCTATCÁAGGGATTGTATCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATAACAGCAAAGTGGACTATGAACGTTCCCCCAGAAAGCAAACATACCATCAACACTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCAGTACGACCGCAGTGCAAACGTTCCATTCACCAAATTATGGTTCTCTAGGCTATATT
                                                                                                                                                                                                                                                                                       ZIP: 20850
                                                                                                                                                                                                                                                                                                          COUNTRY: USA
                                                                                                                                                                                                                                                                                                                            STATE: MD
                                                                                                                                                                                                                                                                                                                                              CITY: Rockville,
                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: Human Genome Sciences, STREET: 9410 Key West Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCTGGGAATACTGATA 1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCGTGCTCTTGCAATTAGCTTTAACTCAAACTAAAGATCCNAAAGTAATTCAACAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCTGAACCCGCAGAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGCTGCGTAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ĠĠAGTTĠĠĊĀĀŦĠĠĀĀĀŦĠŤTĀĀTĠĊTĠĊĀĊĀĊŦŤĀĠĀTĊĠĊŦŤĀĠĀĀĀĀĀĠĊĊĠĊĀĀĀĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCCCTGCAGGAGCTGCGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GICACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGATCAACATCAAGACCGAAGCCTTCAAGAGCGC---CTGGGGCCCCGCTGGGCATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              잁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACAGCTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                Mark D. Adams
Owen White
Owen White
Hamilton O. Smith
J. Craig Venter
OF INVENTION: The Nucleotide sequence of
the Haemophilus influenzae Rd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/09643990A
                                                                                                                                                                                                                                                                                                                                                                                   Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rd Genome,
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fragmente
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     803685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             803625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       803565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                803505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        803445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  803385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   803265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           803325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: nucleic acid; STRANDEDNESS: double; TOPOLOGY: linear SEQUENCE DESCRIPTION: SEQ ID NO: US-09-643-990A-1
                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                       S
                                                        밁
                                                                                                                                  밁
                                                                                                                                                                  S
                                                                                                                                                                                                             문
                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 474; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                         803146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  803086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            803026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      802966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              802912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       802852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 802792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         802735
                                                                                                                                                                                                                                                                                         803266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 301-610-5790
                                                                                                                                                                         697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              460
 817 AACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGCTGCGTAACGCC 876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40
                                                            GGAGTTGGCAATGGAAATGTTAATGCTGCACACTTAGATCGCTTAGAAAAAGCCGCAAAA 803505
                                                                                                                                    GCACCTGTCGAACCATTAAACGCATTACTCAATGCTGGCTATCAAGGGATTGTATCTGCA
                                                                                                                                                                                                                                                                                     CATAACAGCAAAGTGGACTATGAACGTTCCCCAGAAAGCAAACATACCATCAACACTCCG
                                                                                                                                                                                                                                                                                                                                                                                                  TCGATCAACATCAAGACCGAAGCCTTCAAGAGCGC---CTGGGGCCCGCTGGGCATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGATGGCCCATTAAATCTTTACAATGCTGTCGTTGTCGCAGCAGACAAAAAATCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTÄÄÄAATGTGÄÄÄÄÄÄÄCCGGTTGTTCTCGTTGGGGCAÄTGCGTCCTGCAACAGAAÄAAAAGT 803085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTGTCATTACCCATGGTACAGATACCATGGAAGAGGCGCTTATTTCTTAGATTTAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCGTCATCACCCATGGCACCGACACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCTGGCTAAAACTGGCAAAAGCCATCAATGCTCAATGTAAAAGTACT-----GATGGA 802965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGAC 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCTTGGCAACGGGTACCATTGCAGGAAGCGGGCAAAGTTCGGTAAA---TTCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCCTGGCCACCGGCGCACCATCGCCGGCGCCTGGCGCCAGCGCCGACCAGCGCCACC 99
                                                                                                                                                                       GTCACCGACACGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCC
                                                                                                                                                                                                             GTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAG
                                                                                                                                                                                                                                                                                                                                                                 ACCAGTACGACCGCAGTGCAAACGTTCCATTCACCAAATTATGGTTCTCTAGGCTATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTCGTGGTGTTTTAGTCGCAATGAATAATGAAGTACTAGGTGCTCGCGATGTAACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GECAAGGECGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gccgacegcarecreaaccreracaacegcceregccereccaecaacaacaacreecec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGCCAATGTGCGCGGGGAGCAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATAAAGCTGGACAATTAAGTATTGATACTTTAATTGAAGCTGTACCAGAAATGAAAAAT 802851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Kenley K. Hoover
REGISTRATION NUMBER: 4
                                                                                               GCACCGCAATGCTTCGTTCGTCGCGGGTGCTCAGCCCTGCAGGAGCTGCGCAAG
                                                                                                                                                                                                                                                  TTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACAGCTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 310-309-8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 1830121 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 138; DB 4; L. Pred. No. 6.1e-20; O; Mismatches 491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40,302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PB186P1C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1830121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                 816
                                                                                                                                                                         756
                                                                                                                                                                                                                                                    696
                                                                                                                                                                                                                                                                                                                          636
                                                                                                                                                                                                                                                                                                                                                                                                      576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          219
                                                                                                                                      803445
                                                                                                                                                                                                                                                                                         803325
                                                                                                                                                                                                                                                                                                                                                                 803265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    803145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    803025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       802911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         802793
```

Ś

S 문

```
; NUMBER OF SEQ ID NOS: 8344
; SEQ ID NO 1219
; LENGTH: 1041
; TYPE: DNA
; ORGANISM: Proteus mirabilis
US-09-543-681A-1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                        밁
                                                                                   ð
                                                                                                                              문
                                                                                                                                                                 ঠ
                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                      श्च
                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
US-09-543-681A-1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: GARY BRETON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1219, Application US/09543681A Patent No. 6605709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABII TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT FILING DATE: 2000-04-05
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR PILING DATE: 1999-04-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                803686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        803626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         803506 GATAGCGTCGTTGTAGTCCGTTCTTCTCGTGTACCAACGGGTTATACAACTCGTGACGCT 803565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 803566 GAAGTTGATGATAGTAAATATGGCTTTGTAGCATCAGGTACTTTAAATCCACAGAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      877
                     509
                                                                                                                                419
                                                                                                                                                                    389
                                                                                                                                                                                                         359
                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                 299
                                                                                                                                                                                                                                                                                                                                                           245
                                                                                                                                                                                                                                                                                                                                                                                                209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            937
                                                          479
                                                                                         449
                                                                                                                                                                                                                                                                                                                      269
                                                                                                                                                                                                                                                                                                                                                                                                                                   185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              464;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
ACGTGAGCAAGTCGATCAAGACCTCAAGACCTTCAAGAGCGCCTGGGGCCCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTCTTCAAGCTACACCGCAGGAAAATTAGGCATTGATACATTGATTAATGCCGTACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGG
                                                                                                                                                                  CCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACA 448
                                                                                                                                                                                                                                              TGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGGTCCGTTCCATGCGCCCCGGCA
                                                                                                                                                                                                                                                                                   AAACAGACGGCTTTGTGATAACCCATGGTACAGATACGATGGAAGAGACCGCCTATTTTC
                                                                                                                                                                                                                                                                                                                    ACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTACTTTT 328
                                                                                                                                                                                                                                                                                                                                                           TGAACGACCAAGTGTGGTTAAAACTGGCGAATAAAAT-----TAATACGGATTGTGATA
                                                                                                                                                                                                                                                                                                                                                                                              TCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAATGTGACAATCCTCGCAACTGGGGGGAACCATCGCAGGGGGGTGGTG---ACTCTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAACGTGGTGATCCTGGCCACCGGCGCACCATCGCCGGCGCCTGGCGCCAGCGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCGAAGACTTCTAAGA 803702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCTGAACCCCGCAGAAGGCC 936
                                                          AAGCATCTGAAAATCGTGGTGTATTAGTTACCATGAATAATTCAGTGATCAGTGGTAAAG
                                                                                             AGGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTG
                                                                                                                                                                                                         TTGACTTAACCACAGCATGTAAAAAACCGGTGGTGATGGTAGGGGCAATGCGCCCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGCAAAAAAAGTGGCTAACTTAACAGGCGAGCAAGTGGTTAATATTGGTTCGCAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCTGGGAATACTGATA 1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCGTGCTCTTGCAATTAGCTTTAACTCAAACTAAAGATCCNAAAGTAATTCAACAATAT 803685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 129; DB 4;
Pred. No. 9.9e-19;
0; Mismatches 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                              388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              996
                                                          538
                                                                                                                                                                                                           418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124
                     568
                                                                                                                                 478
                                                                                                                                                                                                                                                                                   358
                                                                                                                                                                                                                                                                                                                                                           298
                                                                                                                                                                                                                                                                                                                                                                                                268
                                                                                                                                                                                                                                                                                                                                                                                                                                    244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               148
                                                                                             808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 803625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-103-840A-2/c
; Sequence 2, Application US/09103840A
; Patent No. 6294328
                     밁
                                                        S
                                                                                             皮
                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: WHITE, Owen R.

APPLICANT: FRASER, Claire M.

APPLICANT: VENTER, John C.

TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN
TITLE OF INVENTION: TUBERCULOSIS
FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION UNMERS: US/09/103,840A
CURRENT FILING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE:
SEQ ID NO 2
                                                                                                                                                                        Matches
                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: FLBISCHMAN, Robert
                                                                                                                                                                                                                                                              OTHER INFORMATION: CDC 1551
OTHER INFORMATION: "n" bases
OTHER INFORMATION: represent
                                                                                                                                                                                                                                                                                                                        ORGANISM: Mycobacterium tuberculosis FEATURE:
                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 4403765
                       1742041
                                                                                               1742101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 599
                                        290 CCCATGGCACCCGACACCCTGGAAGAAACCGCCTACTTTTTGAACCTTGGTGGAAAAGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           539
                                                                                                                                230 AGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCA
                                                                                                                                                                        164;
                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Ver.
                                                                                               ACCGGATAGGCGCTGCAGTGCAGGAGGCATTCCGCGGCGCGCAGATGGGGTGGTCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAAGGAGCTGC 988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAATGGTGAAGTAGATGATGCAAAATATGGCTTTATTGCTTCAGAACGTTTAAATCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTTGTCAAAATGAATACGACAGAAGTGCAAGCATTCCAGCCGATTAATGCAGGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGTAÄÄÄÄÄÄÄÄÄÄÄGGTGTTGTGGGTTCGTTCAAGTCGTGTTCCGGTTGGATTTACCACAC 898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGGTTATGTTCATGATGGTAAAGTACACTATTACACTGCTGCAACACCGCGCGCTGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCATGGTGGTAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCA 628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGAAAACTTTGAAAAATATTAA 1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCCACGACCTGAACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGCTGA 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACAGCT
                       CTCACGGCACCGATACGCTCGAAGAGACCGCTCTGTGGCTGGACCTCACCTATGCGGGTA 1741982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCGCAAGAACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAGTGCAGGTGTCGGCAATGGTAACTTATATTCTGACATCTTAAATACTTTAGCTGATG 838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCCCTGCAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGCTAATGCATCTGATTTACCGGCTAAAGCGTTTATAGATAACCACTTTAAAGGTATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGTTGCCTTTGATGTCAGCAAATTAACCGAATTACCAAAAGTAGGTATTGTTTATAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAAGCAAGAGTGTTATTACAGTTATCTTTGACAGAAACACAAGATCCCGCCACGATCC
                                                                                                                                                                      Conservative
                                                                                                                                                                                      8.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O
                                                                                                                                                                                                                                                                a t
                                                                                                                                                                      0
                                                                                                                                                                    Score 83; DB 3;
Pred. No. 5.5e-08;
0; Mismatches 13!
                                                                                                                                                                                                                                                                various positions throughout the t, c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN ANALYSIS IN MYCOBACTERIUM
                                                                                                                                                                        135;
                                                                                                                                                                                                         Length 4403765;
                                                                                                                                                                        Indels
                                                                                                                                                                      0;
                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                     sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               928
                                                                                                                                   289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     859
```

1742042

```
RESULT 15

US-09-103-840A-1/c

Sequence 1, Application US/09103840A

Patent No. 6294328

GENERAL INFORMATION:
APPLICANT: FLEISCHMAN, Robert D.
APPLICANT: WHITE, Owen R.
APPLICANT: VENTER, John C.
APPLICANT: VENTER, JOHN C.
TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM
TITLE OF INVENTION: TUBERCULOSIS
FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/09/103,840A
CURRENT PILING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
SOFTWARE: PATENTIN VEY: 2.1
SEQ ID NO 1
LENGTH: 4411529
TYPE: DNA
ORGANISM: Mycobacterium tuberculosis
OTHER INFORMATION: H37RV
                                                                                                                                                                                             밁
                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     र्
Search completed: March 22, 2005, 12:57:48 Job time : 227 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 8.2%; Score 83; DB 3; Length 4411529; Best Local Similarity 54.8%; Pred. No. 5.5e-08; Matches 164; Conservative 0; Mismatches 135; Indels 0;
                                                                                                                                                                                       1741796 céacchárcráceachácéacriráceárceáceaccaáceacáceacáceacaceacáca 1741737
                                                                                           1741736 TGCTGGTGAGTTTCGGCGGCCGGGTGTTACAGCCTTTGGGCCTGCACAAGGTGGCCAAC 1741678
                                                                                                                                                                                                                                                                                              1741856
                                                                                                                                                                                                                                                                                                                                                                                               1741916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1741861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1741981 GCCGCCCGGTCGTGTTGACCGGGGCCATGCTCAGCGCCGATGCCCCCGGCGCCGATGGCC 1741922
                                                                                                                                            470
                                                                                                                                                                                                                                                                                                                                                                                                                      290 CCCATGGCACCCGACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCG 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        230 AGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCA 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     350 ACAAGCCGATCGTCGTCGGTCGGTCCATGCGCCCGGCACCGCCATGTCCGCCGACGGCA 409
                                                                                                                                                                                                                                                                                           GÉCGCÉCÉGTÉCTTÉACÉGGGCCÁTGCTCAGCGCCGATGCCCCCGGCGCGATGGCC 1741797
                                                                                                                                                                                                                                                                                                                                    ACAAGCCGATCGTCGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGCA 409
                                                                                                                                                                                                                                                                                                                                                                                       CTCACGGCACCGATACGCTCGAAGAGACCGCTCTGTGGCTGGACCTCACCTATGCGGGTA 1741857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAAC 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGCCAATCTGCGCGACGCTTGCGGTCGCCGCCGACCCAGCCGCGCGACCTCGGGG 1741862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGGTGAGTTTCGGCGGCCGGGTGTTACAGCCTTTGGGCCTGCACAAGGTGGCCAAC 1741803
                                                                                                                                                                                                                                           TGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGGCAAGGGCG 469
                                                                                                                                  TGCTGGTGACCATGAACGAGGAGATCCAGTCCGGGCGTGAGCGTGAGCAAGTCGATCAAC 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

[his Page Blank (uspto)

٠,

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     on:
   Pred. No.
score grea
and is der
                                                                                                                                                                                                                                                                                                                                                                                                                1592.5
1579.5
1480.5
                                                                                                                                                                                                                                                                                                                                                                       1040.5
   749.5
748.5
739.5
739.5
735
735
736
737
734
730
730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              eq
eq
                                                                                                                                                                795
786
786
785
782
772
776
766
761
761
758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed. serived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        March 18, 2005, 21:10:06; Search time 180 Seconds (without alignments) 955.881 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      UniProt_03:*
1: uniprot_sprot:*
2: uniprot_trembl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1612378 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-842-628-2
1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 KEVENQQKLANVVILATGGT.....MVAMTKTQDSKELQRIFWEY 336
   Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
   GenCore version 5.1.6 (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       512079187 residues
            ASG2 ECOLI
O64NH4
O7VIE4
O7VIE4
O6LI34
O8XGY3
O7CPT7
ASG2 HARSIN
ASG2 HARSIN
ASG2 BACGU
ASPG WOLSU
ASPG ERWCH
O8ZGB7
ASPG ERWCH
O66C72
O9PJ82
O9PJ82
O604P4
O7WWK9
O604P3
O7CHTO
                                                                                                                                                                                                                                                                                                                                                                                   ASPO_PSES7
ASPO_PSEFL
ASPO_PSEAE
OGPAL6
                                                                                                                                                                                                                                                                                                                                                        ASPQ_ACIGL
Q87J79
                                                                                                                                                                                                                                                                                                             Q8XCU2
Q83Q85
Q8CVR4
ASPG_HELPY
ASPG_HELPJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1612378
             9108839
91018897
968897
961407
961417
910172
987179
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
982718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                    pseudomonas
pseudomonas
pseudomonas
pseudomonas
pseudomonas
cainetobact
acinetobact
vibrio para
escherichia
shigella fl
descherichia
bacteroides
sescherichia
                                          2 yersinia ps
2 campylobact
4 erwinia car
9 erwinia car
3 erwinia chr
6 haemophilus
                                                                                                                                3 haemophilus
2 bacillus su
6 wolinella s
7 yersinia pe
8 erwinia chr
 mannheimia
helicobacte
helicobacte
                                                                                                                                                                                                           salmonella
```

34 679 40.4 347 2 367 679 40.4 347 2 367 679 40.4 347 2 367 679 31.2 37 37 37 37 37 37 37 37 37 37 37 37 37	
666 666 666 666 666 666 666 666 666 66	u u u
679 4 679 679 4 679 679 679 679 679 679 679 679 679 679	685.5
679 40.4 347 679 679 40.4 347 679 631 37.6 379 680 35.7 333 594 35.2 333 592 35.2 335 557 33.2 367 550 32.7 356 550 32.7 356 550 32.7 356 550 32.7 356 550 32.7 356 520 32.7 356 521 31.4 360 522 31.4 360 522 31.4 560 522 31.4 560 522 31.4 681 681 44, Cre CT-2004 (Rel. 44, Cre CT-2004 (Rel. 44, Cre CT-2004 (Rel. 44, Cre CT-2004 (Rel. 45, Las aminase-asparaginase creatinase-asparaginase aminase-asparaginase aminase-asparaginase creatinase-asparaginase asparaginase-asparaginase asparaginase-a	
679 40.4 679 40.4 679 40.4 679 40.4 679 40.4 679 37 2 06520 679 35.7 679 2 09507 592 35.2 593 32 2 07988 593 35.7 33.2 2 07988 594 35.2 33.2 367 2 06537 52.5 33.2 367 2 06537 52.7 33.2 368 2 07989 52.5 33.2 368 2 07989 52.5 33.2 368 2 07989 52.5 32.7 35.6 1 ASG2 52.7 31.4 360 1 ASG2 62.7 62.7 62.7 62.7 62.7 62.7 62.7 62.	347 347
D63UZ0 D63UZ0 D63UZ0 D63UZ0 D63UZ0 D63UZ0 D63UZ0 D63UZ0 D63UZ0 D63UZ0 D63UZ0 D63UZ0 D63UZ0 D73UZ0	Q7N6D9 Q8ZLD3
MTS  62 AA.  63 AS.  62 AA.  63 AS.  63 AS.  63 AS.  63 AS.  63 AS.  63 AS.  64 AS.  65 AS.  65 AS.  66 AS.  66 AS.  67 AS.  68 AS.  6	
Q62j Q63y Q89k Q89k Q7wz Q63i Q7wz Q6azz Q	Q7n6d Q8z1d
ree borners but he had been with the horry signs of the holmes of the horry of the holmes of the holm	
burkholder burkholder burkholder bordetella burkholder bordetella erwinia ca schizosacc	photorhabd salmonella
burkholderi bradyrhizob bordetella burkholderi bordetella ralstonia s eralstonia s eralstonia s erhizosacch schizosacch schizosacch schizosacch schizosacch schizosacch schizosacch schizosacch schizosacch Heim S., Y J.F., WH(3). NH(3). NH(3). NH(3).	photorhabdu galmonella

STATER

```
Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
   X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS).

MEDLINE=9717924; PubMede=9020792; DOI=10.1021/bi961979x;

MEDLINE=9717924; PubMede=9020792; DOI=10.1021/bi961979x;

Jakob C.G., Lewinski K., Lacount M.W., Roberts J., Lebioda L.;

"Ion binding induces closed conformation in Pseudomonas 7A

"Ion binding induces closed conformation in Pseudomonas 7A

glutaminase-asparaginase (PGA); crystal structure of the PGA-SC

NH4+ complex at 1.7-A resolution.";

Biochemistry 36:923-931(1997).

Biochemistry 36:923-931(1997).
                                                                                                                                                                                                               ASPO PSES7 STANDARD; PRT; 337 AA.
P10182;
01-MAR-1989 (Rel. 10, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
Glutaminase-asparaginase (EC 3.5.1.38) (L-asparagine/L-glutamine amidohydrolase) (L-ASNase/L-GINase) (PGA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIGNAL
CHAIN
ACT_SITE
ACT_SITE
ACT_SITE
ACT_SITE
SEQUENCE
                                                                        MEDLINE-78080774; PubMed-619999;
Holcenberg J.S., Ericeson L., Roberts J.;
"Amino acid sequence of the diazooxonorleucine binding site of
Acinetobacter and Pseudomonas 7A glutaminase-asparaginase enzymes.";
Biochemistry 17:411-417(1978).
                                                                                                                                                                                     Pseudomonas sp. (strain 7A).
Bacteria, Proteobacteria.
NCBI_TaxID=313;
                                                                                                                 SEQUENCE OF 1-26.
                                                                                                                                 Biochemistry 33:10257-10265(1994).
                                                                                                                                                              SEQUENCE, AND X-RAY CRYSTALLOGRAPHY (2.0 MEDLINE=94347759; PubMed=8068664;
                                                                                                                                                                                                                                                                             PSES7
                                                                                                                                        asparaginase.";
                                                                                                                                              Lubkowski J., Wlodawer A., Ammon H.L., Copeland T.D., Swain A.L., "Structural characterization of Pseudomonas 7A glutaminase-
                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                             326
                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                           206
                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                         146
                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                        86
                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                          DWVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                   APKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                  VVVGSMRPGTAMSADGMINLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                        QVMQIASESISNDDLLKLGKRVABLAESKDVDGIVITHGTDTLEETAFFLNLVEKTDKPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                QVMQIASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPI
                                                                                                                                                                                                                                                                                                            DWVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 362
                                                                                                                                                                                                                                                                                                                                                                                                         VVVGSMRPGTAMSADGMLNLYNAVAVASDKQSRGKGVLVTMNDBIQSGRDVSKAVNIKTB
                                                                                                                                                                                                                                                                                                                                                                          AFKSAWGPMGMVVEGKSYWFRLPAKRHTVNSEPDIKQISSLPQVDIAYGYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    126
126
126
126
198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ጅ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      38608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94.8%;
94.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Œ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Potential.
Glutaminase-asparaginase.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1592.5;
No. 9.26
                                                                                                                                                                        ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ,2e-90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
   L-glutamate + NH(3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                           7A
9 PGA-SO4(2-)-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                                                                                                                                                                                                        145
                                                                                                                                                                                                                                                                                                                                            325
                                                                                                                                                                                                                                                                                                                                                                           265
                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                         205
                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ļ
     -1-
-1-
-1-
-1-
-1-
PDB;
PDB;
PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATALYTIC ACTIVITY: L-asparagine + H(2)O = L-aspa SUBUNIT: Homotetramer.
SUBCELLULAR LOCATION: Periplasmic.
SIMILARITY: Belongs to the asparaginase 1 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequencing; Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                         æж
                                                                                                                                                                                                                                                                                                                                                                                                         (in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    H(2)O = L-aspartate + NH(3).
                                                                                                                                                                                                                                                                                                                                                                                                         Ref.
                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Periplasmic.
```

ঠ

음 **성** 음

8 밁 S 밁 8 밁

```
RESULT 3 ASPQ PSEPL ID ASPQ PSEP AC 068897 DT 30-MAY DT 35-OCT DE Glutam DE GLUTAM CO PSEUDO OC 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 317
                                                                                                                                                                                                                                                                    JSPO PSEFL STANDARD; PRT; 362 AA C68897 STANDARD; PRT; 362 AA C68897 P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HELIX
TURN
STRAND
TURN
HELIX
TURN
HELIX
SEQUENCE
                             This SWISS-PROT entry is copyright. It is produced through a collaboratio between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no wa modified and this statement is not removed. Usage by and for commercia entitles requires a license agreement (See http://www.isb-sib.ch/announce or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria;
Pseudomonadaceae; Pseudomo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pseudomonas fluorescens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Name=ansB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      al Similarity
317, Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DWVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSR-QQGGFVLRNARQPDDKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QVMQIASES I TNDDLLKLGKRVAELADSNDVDGI VI THGTDTLEETAYFLDLTLNTDKPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QVMQIASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEVENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LAQNGAKAL I HAGTGNGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AFKBAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEVENQQKLANVVI LATGGTI AGAGASAANSATYQAAKVGVDKLI AGVPELADLANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              297
301
303
306
310
321
327
327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94.0%;
nilarity 94.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13525,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
301
304
307
307
323
323
36200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gammaproteobacteria; Pseudomonadales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : annotation update)
precursor (EC 3.5.1.38)
(L-ASNase/L-GLNase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VSSRLTPALQTLRKTGTQI IRSSHVNQGGFVLRNABQPDDKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1579.5;
Pred. No. 5.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11DEEC467CB1475E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ed. No. 5.36
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3e-89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (L-asparagine/L-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fluorescens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                      collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
```

```
RESULT

ID PAGE

ID PAGE

AC Q9

PG Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOLUTION OF THE PROPERTY OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPRO04550; AsnASE II.
InterPro; IPRO06034; Asp/Glutamnse.
Pf00710; AspAraginase; 1.
PRINTS; PR00139; ASNCINASE.
ProDom; PD003221; Asp/Glutamnse; 1.
TIGRAMS; TIGRO0520; asnASE II; 1.
PROSITE; PS00144; ASN GLIN ASE I; 1.
PROSITE; PS0017; ASN_GLIN ASE I; 1.
PROSITE; PS00917; ASN_GLIN ASE II; 1.
PROSITE; PS00917; ASN_GLIN A
                      SEQUENCE FROM N.A.

STRAIN-AUCC 15692 / PAO1;

MEDLINE-20437337; PubMed=10984043; DOI=10.1038/35023079;

MEDLINE-20437337; PubMed=10984043; DOI=10.1038/35023079;

Stover C.K., Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Warrener P.,

Stover C.K., Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Warrener P.,

Stover C.K., Pham X.-Q.T., Erwin A.L., Kooguchi S.D., Warrener P.,

Stover C.K., Pham X.-Q.T., Erwin A.L., Kowalik D.J., Lagrou M.

Garber R.L., Goltry L., Tolentino E., Westbook-Wadman S., Yuan Y.,

Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M.,

Smith K.A., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen I.T.,

Reizer J., Saler M.H., Hancock R.E.W., Lory S., Olson M.V.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASPO_PSEAE STANDARD; PRT; 362 AA. 091407; 091407; 05-JUL-2004 (Rel. 44, Created) 05-JUL-2004 (Rel. 44, Last sequence update) 05-JUL-2004 (Rel. 45, Last annotation update) Glutaminae—asparaginase precursor (EC 3.5.1.38) glutamine amidohydrolase) (L-ASNase/L-GINASE). Name=ansB; OrderedLocusNames=PA1337;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
ACT_SITE
ACT_SITE
ACT_SITE
ACT_SITE
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pseudomonas aeruginosa.
Bacteria; Proteobacteria; Gammaproteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PSEAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AF056495; AAC33155.1; HSSP; P10182; 3PGA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pseudomonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 87.2
94; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DWVVAHDLNPQKAR I LAMVAMTKTQDSKELQR I FWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LAQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSR-QQGGFVLRNAEQPDDKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AFKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IVVGSMRPGTAMSADGMLNLYNAVAVAGSKDARGKGVLVTMNDEIQSGRDVSKMINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEVETKTKLANVVILATGGTIAGAGASAANSATYQAAKVGIEQLIAGVPELSQIANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEVENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LAQAGAKAIIHAGTGNGSVSSKVVPALQELRKQGVQIIRSSHVNAGGFVLRNAEQPDDKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AFKSPWGPLGMVVEGKSYWFRLPAKRHTMDSEFDIKTIKSLPDVEIAYGYGNVSDTAVKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DWVVAHDLNPQKARILAMVALTKTQDSKELQRMFWEY
    genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1
26
45
125
126
198
362 AA;
    веquence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         88.1%;
87.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Potential.
Glutaminase-asparaginase.
By similarity.
By similarity.
By similarity.
By similarity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1480.5;
Pred. No. 6.86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B8C640D24C5FF31B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .8e-83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (L-asparagine/L-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                  3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                265
```

```
RESULT 5
Q6FAL6
ID Q6FA
AC Q6FA
DT 05-J
DT 05-J
DT 05-J
DT 05-J
DT 05-J
                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                   음 중 음
                                                                                                                                                                                                                    ફ
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                ર્ક
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                             $
                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local &
Matches 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AB004563; AAG04726.1; -.

PIR; C83478; C83478.

HSSP; P10182; 3PGA.

InterPro; IPR004550; AsnASE_II.

InterPro; IPR004550; AsnASE_II.

InterPro; IPR006034; Asp/Glutamnse.

Pfam; PP00710; Asparaginase; 1.

PRINTS; PR00139; ASNGINASE; 1.

PRODOM; PD003221; Asp/Glutamnse; 1.

TIGRPAMG; TIGR00520; asnASE_I; 1.

PROSITE; PS00144; ASN_GLN_ASE_I; 1.

PROSITE; PS00144; ASN_GLN_ASE_I; 1.

PROSITE; PS00147; ASN_GLN_ASE_I; 1.

PROSITE; PS001917; ASN_GLN_ASE_I; 1.

Complete protecome; Hydrolase; Periplasmic; Si.
Q6FAL6 PRELIMINARY;
Q6FAL6;
05-JUL-2004 (TrEMBLrel. 27, C
05-JUL-2004 (TrEMBLrel. 27, L
05-JUL-2004 (TrEMBLrel. 27, L
Glutaminase-asparaginase (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
ACT_SITE
ACT_SITE
ACT_SITE
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Complete
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a centre of the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and composite the statement is not removed. Usage by and composite the statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
                                                                                                               326
                                                                                                                                    300
                                                                                                                                                          266
                                                                                                                                                                               241
                                                                                                                                                                                                       206
                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                  146
                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                              96
                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                         26
                                                                                                                                                                                                                                                                                                                                                               μ
                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                 LAQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSR-QQGGFVLRNAEQPDDKN
                                                                                                                                                                                                                   APKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQI6SLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                         KEVAPQQKLSNVVILATGGTIAGAGASAANSATYTAAKVPVDQLLASVPQLKDIANVRGE
                                                                                                                                                                                                                                                                                                                                                       KEVENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE
                                                                                                              DWIVAHDLNPQKARILAAVAMTKTQDSKBLQRIFWBY
                                                                                                                           DWVVAHDLNPQKARILAMVAMTKTQDSKBLQRIFWEY
                                                                                                                                                                                                       AFKSPWGPLGMVVEGKSYWFRAPVKRHTVNSEFDIKQISALAPVEIAYSYGNVSDTAYKA
                                                                                                                                                          LAQAGAKAI
                                                                                                                                                                                                                                                                                                                                                                                                                                  362
                                                                                                                                                                                                                                                                                                                                                                                                                                          26
45
125
126
                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                          IHAGTGNGSVPARVVPTLQELRKQGVQIIRSSHVNAGGFVLRNAEQPDDKN
                                                                                                                                                                                                                                                                                                                                                                                                                                            362
362
45
125
126
198
                                                                                                                                                                                                                                                                                                                                                                                                85.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                  38644
  )B)
                                                                                                                                                                                                                                                                                                                                                                                                                                 MW;
, Created)
, Last sequence update)
, Last annotation update
EC 3.5.1.38).
                                                                                                                                                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                                                               Potential.
Glutaminase-asparaginase.
By similarity.
                                                                                                                                                                                                                                                                                                                                                                                    Score 1432.5;
Pred. No. 5.9e
22; Mismatches
                                                        ₿
                                                                                                                                                                                                                                                                                                                                                                                                .9e-80;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Signal.
           update)
                                                                                                                                                                                                                                                                                                                                                                                                            띰
                                                                                                                                                                                                                                                                                                                                                                                    30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   = L-glutamate + 
= L-aspartate +
                                                                                                                                     336
                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NH(3).
                                                                                                                                                                                                                                                                                                                                                                                      1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      outstation -
                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ខ្ល
                                                                                                                                                                                                                                                                                               145
                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                 299
                                                                                                                                                                                                       265
                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                   205
                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                          85
```

```
RESULT 6
ASPO_ACIGL STANDARD; PRT; 331 AA.
ID ASPO_ACIGL STANDARD; PRT; 331 AA.
AC P10172;
DT 01-MAR-1989 (Rel. 10, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 25-CCT-2004 (Rel. 45, Last annotation update)
DE Glutaminase-asparaginase (EC 3.5.1.38) (L-asparaginase (EC 3.5.1.38) (L-asparaginase (EC 3.5.1.38) (EC 3.5.1.38)
DE amidohydrolase) (L-ASNase/L-GLNase).
GN Name-ansB;
OS Acinetobacter glutaminasificans.
OC Bacteria; Proteobacteria; Gammaproteobacteria; Ps.
OC Moraxellaceae; Acinetobacter.
OX NCBI TaxID=474;
RN [1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RA Barbe V., Vallenet D., Fonknechten N., Kreimeyer A., Oztas S.,
RA Labarre L., Cruveiller S., Robert C., Duprat S., Wincker P.,
A Ornston L.N., Weissenbach J., Marliere P., Cohen G.N., Medigue C.;
RT ADP1, a versatile and naturally transformation competent bacterium.";
RI Mucleic Acids Res. 0.0-0(2004).

DR EMBL; CR543861; CA66897.1; -
DR GO; GO:0004067; F:asparaginase activity; IEA.
GO; GO:00050417; F:glitamin (asparagin.) ase activity; IEA.
GO; GO:0005020; P:amino acid metabolism; IEA.
DR GO; GO:0006528; P:asparagine metabolism; IEA.
DR GO; GO:0006528; P:asparagine metabolism; IEA.
DR InterPro; IPR00634, AspGlutamnse.
DR InterPro; IPR00634, AspGlutamnse.
DR PRINTS; PR00139; AspGlutamnse.
DR PRINTS; PR00139; AspGlutamnse; 1.
DR PRINTS; PR001321; AspGlutamnse; 1.
DR PROSITE; PS00144; ASN GLN ASE I; 1.
DR PROSITE; PS00144; ASN GLN ASE 2; 1.
Complete proteome.
SC SEQUENCE 355 AA; 37925 MW; C007FB5751720C45 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GO CRANT DE REPRESENTATION DE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Name=aspQ; OrderedLocusNames=ACIAD2088;
Acinetobacter sp. (strain ADP1).
Bacteria; Proteobacteria; Gammaproteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Moraxellaceae; Acinetobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NPQKARILAMVAMTKTQDSKBLQRIFWEY
||||||:||:||:||:||
NPQKARLLAALALTKTNDAKBIQRMFWQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MVVEGKSYWFRLPAKRHTVNSEFDIKQI--SSLPQVDIAYSYGNVTDTAYKALAQNGAKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NVVVATGGTIAGAGASSTNSATYTAAKVPVDALINAVPQIKDLANVSGIQALQIASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIHAGTGNGSVSSRVVPALQELR-KNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61.9%; Score 1040.5; DB 2; 63.8%; Pred. No. 6.1e-56; ive 46; Mismatches 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (L-asparagine/L-glutamine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pseudomonadales
                                                                                               Pseudomonadales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            190
```

```
ProDom, PD00323; Ass/Glutamnse; 1.
ProDom, PD00322; Ass/Glutamnse; 1.
TIGRPAMe; TIGR00520; asnASE I; 1.
PROSITE; PS00114; ASN GLN ASE 1; 1.
PROSITE; PS00017; ASN GLN ASE 2; 1.
3D-structure; Direct protein sequencir ACT SITE 12 12
ACT SITE 93 93
ACT SITE 93 93
ACT SITE 93 93
ACT SITE 165 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lubkowski J., Wiodawer A., Housset D., Weber I.T., Ammon H.L., Murphy K.C., Swain A.L.;
"Refined crystal structure of Acinetobacter glutaminasificans glutaminase-asparaginase.",
Acta Crystallogr. D 50:826-832(1994).
-!- CATALYTIC ACTIVITY: L-glutamine + H(2)O = L-glutamate + NI-1- CATALYTIC ACTIVITY: L-asparagine + H(2)O = L-aspartate + II-1- SUBUNIT: Homotetramer.
-!- SUBUNIT: Homotetramer.
-!- SUBUNIT: Homotetramer.
-!- SUBURLARITY: Belongs to the asparaginase I family.
 Tanaka S., Robinson B.A., Appolla E., Miller M., Ammon H.L.,
Roberts J., Weber I.T., Wlodawer A.;
"Structures of smidohydrolases. Amino acid sequence of a glutaminase-
asparaginase from Acinetobacter glutaminasificans and preliminary
crystallographic data for an asparaginase from Erwinia chrysanthemi.";
J. Biol. Chem. 263:8583-8591(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-78080774; PubMed-619999;
Holcemberg J.S., Ericsson L., Roberts J.;
"Amino acid sequence of the diazooxonorleucine binding site of
Acinetobacter and Pseudomonas 7A glutaminase-asparaginase enzymes.";
Biochemistry 17:411-417(1978).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIR, A28063, A28063.
PDB, 1AGX; X-ray; @=1-331.
InterPro; IPR004550, AsnASE II.
InterPro; IPR006034; Asp/Glutamnse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00710; Asparaginase; 1.
PRINTS; PR00139; ASNGLNASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 1-60.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE.
MEDLINE-88243706; PubMed-3379033;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed=15299349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct
12
92
93
165
165
122
   Involved in substrate
similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequencing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hydrolase; Periplasmic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            L-glutamate + NH(3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NH (3)
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 204
                                              Q87J79 PRELIMINARY; PRT; 3
Q87J79;
Q17J79;
Q17J7N-2003 (TrEMBLrel. 24, Created)
Q1-JUN-2003 (TrEMBLrel. 24, Last seque)
Q1-QCT-2003 (TrEMBLrel. 25, Last annot Periplasmic L-asparaginase II.
QrderedLocusNames-VPA0374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STEAND
TORN
STRAND
TORN
STRAND
TURN
STRAND
S
                   Vibrio parahaemolyticus.
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                       303
                                                                                                                                                                                                                                                                     308
                                                                                                                                                                                                                                                                                                       243
                                                                                                                                                                                                                                                                                                                                       249
                                                                                                                                                                                                                                                                                                                                                                        183
                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                          123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                        NPQKARILAMVAMTKTQDSKELQRIFWEY
                                                                                                                                                                                                                                                                                                                                                                                         MVVEGKSYWFRLPAKRHTVNSEFDIKQI--SSLPQVDIAYSYGNVTDTAYKALAQNGAKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSAWGPLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLALVEKTDKFIVVVGSMRPGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NVVIVATGGTIAGAGASSTNSATYSAAKVPVDALIKAVPQVNDLANITGIQALQVASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASESI
                                                                                                                                                                                                                                       NPQKARLLMALALTKINDAKBIQNMFWNY
                                                                                                                                                                                                                                                                                                      I HAGTGNGSMANYLVPEVRKLHDEQGLQIVRSSRVAQGFVLRNAEQPDDKYGWIAAHDL
                                                                                                                                                                                                                                                                                                                                     LIHAGTGNGSVSSRVVPALQBLR-KNGVQIIRSSRQQGGFVLRNABQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                        TLVEGKPYWFRSSVKKHTINISEFNIEKI QGDALFGVQI VYGSDNMMPDAYQAFAKAGVKA
                                                                                                                                                                                                                                                                                                                                                                                                                                        TDKELLSLARQVNDLVKKPSVNGVVITHGTDTMEETAFFLNLVVHTDKFIVLVGSMRPST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11175
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
11775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61.8%;
62.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ¥,
                   Gammaproteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1037.5;
Pred. No. 8.6e
52; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70F1BF823E9B0D31 CRC64;
                                                                                 annotation update)
                                                                                                      sequence update)
                                                                                                                                                     354
                                                                                                                                                                                                                                                                      336
                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .6e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        70;
                   Vibrionales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             υ
•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

248

307 302 190

182

130 122

```
RESULT OF A PROPERTY OF A PROP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQUE DE RESERVATION DE LA COMPANIA DEL COMPANIA DE LA COMPANIA DEL COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ર્શ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GO; GO:0004067; F:asparaginase activity; IE
GO; GO:0006520; P:amino acid metabolism; IE
GO; GO:0006528; P:asparagine metabolism; IE
GO; GO:0006528; P:asparagine metabolism; IE
InterPro; IPR004550; AsnASE_II.
InterPro; IPR004534; Asp/Glutamnse.
PF00710; Asparaginase; I.
PRINTS; PR001139; ASNGLNASE.
PRODOM; PD003221; Asp/Glutamnse; 1.
TIGRPAMS; TIGR00520; asnASE_II; 1.
PROSITE; PS00144; ASN_GLN_ASE_1; 1.
PROSITE; PS00144; ASN_GLN_ASE_2; 1.
                                                                                                                                                                                                                                                                                                                          OBXCU2 PRELIMINARY; PRT; 3
OBXCU2; Q7AAM7;
O1-MAR-2002 (TrEMBLrel. 20, Created)
O1-MAR-2002 (TrEMBLrel. 20, Last seque
25-OCT-2004 (TrEMBLrel. 28, Last annot
Periplasmic L-asparaginase II.
Name=ansB; OrderedLocusNames=EC83833,
SEQUENCE FROM N.A.
STRAIN=0157:H7 / EDL933 / ATCC 700927 / EHEC;
MEDLINE=21074935; PubMed=11206551; DOI=10.1038/35054089;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-RIMD 2210633 / Serotype 03:K6;
MEDLINE=22508454; PubMed=12620739; DOI=10.1016/S0140-6736(03)12659-1;
Makino K., Oshima K., Kurokawa K., Yokoyama K., Uda T., Tagomori K.,
Iijima Y., Najima M., Nakano M., Yamashita A., Kubota Y., Kimura S.,
Yasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;
"Genome sequence of Vibrio parahaemolyticus: a pathogenic mechanism
                                                                                                                                                                                                         Escherichia coli O157:H7.
Bacteria, Proteobacteria, Gammaproteobacteria, Enterobacteriaceae, Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AP005085; BAC61717.1; -. HSSP; P06608; 1HG1.
                                                                                                                                                           NCBI_TaxID=83334;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    distinct from that of V. cholerae."; Lancet 361:743-749(2003).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity 48.2
nes 160; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proteome.
354 AA; 38004 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTLNPQKARILLMLSLTQTKNYQDVQKMFQYY 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ASESITUDDLLKLASSVAELADSUDVDGIVITHGTDTLEETAYFLULVEKTDKPIVVVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -WGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MRPSTAMSADGPVNLYNAVVTATDEDSKGRGVLVAMNDTIFDARDVTKINTTSVSTFQSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KFDGIVSÄGVGNGNLYHTVFDELEKASKDGIVVVRSSRTFTGSTTLDÄEIDDDKYGFVAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSQDMNDEVWLKLAKRVNELLAQDDVDGIVITHGTDTLEETAYFLDLTVKSDKPVVIVGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QSDLPNIKILATGGTIAGAGQSATES-NYTAGKVGVESLISAVPSMTNIADISGEQVVSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67;
                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 795; DB 2; Length Pred. No. 6.8e-41; 7; Mismatches 103; Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A1576A2ECC3A6096 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IEA
IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₹
                                                                                                                                                                                                                                                       Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       82
        RESULT 9
Q83Q85
ID Q83Q85
```

```
5
                                                                                                                              片
                                                                                                                                                                              S
                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SQUE DO RESERVADO DE RESERVADO 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP; P00805; IJJA.

HSSP; P10172; IAGX.

GO; GO:0004067; F:asparaginase activity; IEA.
GO; GO:0004067; F:asparaginase activity; IEA.
GO; GO:0006520; F:amino acid metabolism; IEA.
GO; GO:0006528; P:asparagine metabolism; IEA.
InterPro; IPR004550; AspASE II.
InterPro; IPR00634; Asp/Glutamuse.
InterPro; IPR00634; Asp/Glutamuse.
InterPro; IPR006377; FGGY kin.
Pfam; PF00710; Asparaginase; 1.
PRINTS; PR00139; ASNGINASE.
PRODOM; PD003221; AspASE II; 1.
PROSITE; PS00144; ASN GIN ASE I; 1.
PROSITE; PS00144; ASN GIN ASE 2; 1.
PROSITE; PS001445; FGGY_KINASES 2; 1.
PROSITE; PS001445; FGGY_KINASES 2; 1.
PROSITE; PS001445; FGGY_KINASES 2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=0157:H7 / RIMD 0509952 / EHEC;

MEDLINE=21156231; PubMed=11258796;

Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoya Hayashi T., Makino K., Ohnishi M., Kurokawa C., Oasawara N., Tobe 1 Iida T., Takami H., Honda T., Sasakawa C., Oasawara N., Yasunag Kuhara S., Shiba T., Hattori M., Shinagawa H.;

"Complete genome sequence of enterohemorrhagic Escherichia coli 0157:H7 and genomic comparison with a laboratory strain K-12.";

DNA Res. 8:11-22(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D., Rose D.J., Mayhew G.F., Evans P.S., Gregor J., Kirkpatrick H.A., Possfai G., Hackett J., Klink S., Boutin A., Shao Y., Miller L., Grotbeck E.J., Davis N.W., Lim A., Dimalanta E.T., Potamousis K., Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C., Welch R.A., Blattner P.R.; "Genome sequence of enterohaemorrhagic Escherichia coli 0157:H7.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; A8005526; AAG58088.1; -.
EMBL; A900253; BAB37256.1; -.
PIR; A98108; A98108.
PIR; D85953; D85953.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 409:529-533(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
320
                                                                                                                                  260
                                                                                                                                                                                               248
                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                 188
                                                                                                                                                                                                                                                                                                                                                                                                  140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE
NPQKARVLLQLALTQTKDPQQIQQIFNQY
                                  NPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                  GIVSAGVGNGNLYKSVFDTLATAAKNGTAVVRSSRVPTGATTQDAEVDDAKYGFIASGTL
                                                                                                                                                                                            ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNABQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                PLGYIHNGKIDYQRTPARKHTSDTPFDVSKLNELPKVGIVYNYANASDLPAKALVDAGYD
                                                                                                                                                                                                                                                                                                                                                                                                  STSMSADGPFNLYNAVVTAADKASANRGVLVVMNDTVLDGRDVTKTNTTDVATFKSVNYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTBAFKSA-WG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LPNITILATGGTIAGGGDSATKS-NYTAGKVGVENLVNAVPQLKDIANVKGEQVVNIGSQ
                                                                                                                                                                                                                                                                                                                          PLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36850 MW; A5204EBD00910013 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46.8%; Score 786; DB 2;
48.3%; Pred. No. 2.4e-40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59; Mismatches 107;
348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yasunaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yokoyama K.,
Tobe T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  128
                                                                                                                                                                                                      307
                                                                                                                                                                                                                                                                    259
                                                                                                                                                                                                                                                                                                                                        247
                                                                                                                                                                                                                                                                                                                                                                                                         199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81
```

PRT;

348

₹

```
밁
                         5
                                                                    밁
                                                                                                र्
                                                                                                                                                               र्
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Sim
Matches 160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=2259274; PubMed=12704152;

DOI=10.1128/IAI.71.5.2775-2786.2003;

Mei J., Goldberg M.B., Burland V., Venkatesan M.M., Deng W.,

A Wei J., Goldberg M.B., Burland V., Venkatesan M.M., Deng W.,

A Pournier G., Mayhew G.P., Plunkett G. III, Rose D.J., Darling A.,

A Mau B., Perna N.T., Payne S.M., Runyen-Janecky L.J., Zhou S.,

Schwartz D.C., Blattner F.R.;

"Complete genome sequence and comparative genomics of Shigella

"T "Complete genome sequence and comparative genomics of Shigella

"I flexneri serotype 2a strain 2457T.";

Infect. Immun. 71:2775-2786(2003).

EMBL; ABO16398; AAN44435.1; -.

REMBL; ABO16398; AAN44435.1; -.
                                                                                                                                                                                                                                                                                                                                                  GO; GO:0004067; F:asparaginase activity; IEA.
GO; GO:0004520; F:asparaginase activity; IEA.
GO; GO:0006528; P:asparagina metabolism; IEA.
InterPro; IPR004550; AsnASE II.
InterPro; IPR00634; AspGV_kin.
InterPro; IPR006571; FGGV_kin.
Pfam; PF00710; Asparaginase; 1.
PFINTS; PR00139; ASNGINASE.
PRINTS; PR00139; ASNGINASE.
PRODOM; PD003221; AspGINASE.
PROSITE; PS00144; ASN_GIN_ASE I; 1.
PROSITE; PS00144; ASN_GIN_ASE 1; 1.
PROSITE; PS00144; ASN_GIN_ASE 2; 1.
PROSITE; PS000445; FGGV_KINASES_2; UNKNOWN_1.
Complete proteome.
SEQUENCE 348 AA; 36805 MM; BE2058CF5A010397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=301 / Serotype 2a;
MEDLINE=22272406; PubMed=12384590; DOI=10.1093/nar/gkf566;
MIDLINE=22272406; PubMed=12384590; DOI=10.1093/nar/gkf566;
Jin Q., Yuan Z., Xu J., Wang Y., Shen Y., Lu W., Wang J., Liu H.,
Yang J., Yang F., Zhang X., Zhang J., Yang G., Wu H., Qu D., Dong J.
Sun L., Xue Y., Zhao A., Gao Y., Zhu J., Kan B., Ding K., Chen S.,
Cheng H., Yao Z., He B., Chen R., Ma D., Qiang B., Wen Y., Hou Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN=2457T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales; Enterobacteriaceae; Shigella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shigella flexneri.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Name=ansB; OrderedLocusNames=S3157, SF2954;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
25-CCT-2004 (TrEMBLrel. 28, Last annotation update)
Periplasmic L-asparaginase II.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Genome sequence of Shigella flexneri 2a: insights into pathogenicity through comparison with genomes of Escherichia coli K12 and O157."; Nucleic Acids Res. 30:4432-4441(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q83Q85, Q7C019,
                                                                                                                                                                                                                                                                                                      Local Similarity
                                 188
                                                                                                                                            82
                                                                                                                                                                                                               23
                                                                                                                                                                                                                                                  ø
                                                                  SITNDDLLKLASSVABLADSNDVDGIVITHGTDTLEBTAYFLNLVEKTDKPIVVVGSMRP
                                                                                                                                                                                                           DMNDNVWLTLAKKIN--ADCDKTDGFVITHGTDTMBBTAYFLDLTVKCDKPVVMVGAMRP
PLGY I HNGKI DY QRTPARKHTSDTPPDVSKLNELPKVG I VYNYANASDLPAKAL VDAGYD
                    PLGMVVEGKSYWFRLPAKRHTVNSBFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK
                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                        36805 MW; BE2058CF5A010397 CRC64;
                                                                                                                                                                                                                                                                                                  46.8%;
                                                                                                                                                                                                                                                                                 59;
                                                                                                                                                                                                                                                                          Pred. No. 2.4e-40;
9; Mismatches 106; Indels
                                                                                                                                                                                                                                                                                                                    Score 786;
                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IBA.
                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>.</u>
                                 247
                                                                                                       187
                                                                                                                                                                            128
                                                                                                                                                                                                               81
                                                                      199
                                                                                                                                          139
```

```
RESULTATION OF THE PROPERTY OF
                        8
                                                                           밁
                                                                                                                        S
                                                                                                                                                                                밁
                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AE016766; AANB1991.1; -.
HSSP; P00805; LJJA.
GO; GO:0004067; F:asparaginase activity; IE
GO; GO:0016787; F:hydrolase activity; IEA.
GO; GO:0016520; P:amino acid metabolism; IE
GO; GO:0006528; P:asparagine metabolism; IE
InterPro; IPR004550; AspASE II.
InterPro; IPR004550; AspASE II.
Pfam; PF00710; Asparaginase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

STRAIN=06:H1 / CFT073 / ATCC 700928;

STRAIN=06:H1 / CFT073 / ATCC 700928;

MEDLINE=22388234; PubMed=12471157; DOI=10.1073/pnas.252529799;

Welch R.A., Burland V., Plunkett G. III, Redford P., Roesch P.,

Rasko D., Buckles E.L., Liou S.-R., Boutin A., Hackett J., Stron

Mayhew G.F., Rose D.J., Zhou S., Schwartz D.C., Perna N.T.,

Mobley H.L.T., Donnenberg M.S., Blattner F.R.;

"Extensive mosaic structure revealed by the complete genome sequence of uropathogenic Escherichia coli.";

proc. Natl. Acad. Sci. U.S.A. 99:17020-17024(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QBCVR4
QBCVR4;
QBCVR4;
QBCVR4;
Q1-MAR-2003 (TrEMBLre1. 23, Created)
Q1-MAR-2003 (TrEMBLre1. 23, Last sequence up
Q1-OCT-2003 (TrEMBLre1. 25, Last annotation
L-asparaginase II (EC 3.5.1.1).
Name=ansB; OrderedLocusNames=c3543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PR00139; ĀSNGĪAŅASB.

Prodom; PD003221; ABP/Glutamnse; 1.

TIGRRĀMS; TIGRRO520; asmASB II; 1.

PROSITE; PS00144; ASN GLN ĀŠB 1; 1.

PROSITE; PS001917; ASN GLN ĀSB 2; 1.

COmplete proteome; Hydrolase.

COMPLETE STOTEOME; Hydrolase.

SEQUENCE 348 AA; 36881 MW; 71105BD8E007C559 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Enterobacteriaceae; Escherichia.
NCBI_TaxID=217992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Escherichia coli 06.
                                                                                                                                                                                140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 308
                                                                                                                              188
                                                                                                                                                                                                                                 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160;
                                                                                                                                                                                                                                                                                      82
                                                                                                                                                                                                                                                                                                                                    69
                                                                                                                                                                                                                                                                                                                                                                                       23
                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                 GTAMSADGMINIYNAVAVASNKOSRGKGVIVTMNDEIQSGRDVSKSINIKTEAFKSA-WG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NPQKARILAMVAMTKTQDSKBLQRIFWBY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GIVSAGVGNGNLYKSVFDTLATAAKNGTAVVRSSRVFTGATTQDAEVDDAKYGFVASGTL
ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                           NPQKARVLLQLALTQTKDPQQIQQIFNQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 785; DB 2;
Pred. No. 2.7e-40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genome sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           J., Stroud
V.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Сарв
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ď.,
                             307
                                                                                                                                                                                                                                                                                                                                         128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         319
                                                                                259
                                                                                                                                   247
                                                                                                                                                                                   199
                                                                                                                                                                                                                                   187
                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                            81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         307
```

```
닭
                                                                                                         Ş
                                                                                                                                 밁
                                                                                                                                                      र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멅
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                 8
                                           문
                                                            8
                                                                                                                                                                            밁
                                                                                                                                                                                                  र्
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                     Pfam; PF00710; Asparaginase; 1.
PRINTS; PR00139; ASNGLAASE.
PRODOm; PD003221; Asp(Slutamuse; 1.
TIGRPAMs; TIGR00520; aspaSs_II; 1.
PROSITE; PS00144; ASN_GLN_ASE_1; 1.
PROSITE; PS00917; ASN_GLN_ASE_2; 1.
Complete proteome.
SEQUENCE 352 AA; 37752 MW; 18783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q8A446;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

STRALN=VPI-5482 / ATCC 29148;

MEDLINE=22550858; PubMed=12663928; DOI=10.1126/science.1080029;

XU J., Bjursell M.K., Himrod J., Deng S., Carmichael L.K.,

Chiang H.C., Hooper L.V., Gordon J.I.;

"A genomic view of the human-Bacteroides thetaiotaomicron symbiosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteroides thetaiotaomicron.
Bacteria; Bacteroides (class); Bacteroidales;
Bacteroidaceae; Bacteroides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L-asparaginase II.
OrderedLocusNames=BT2757;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUN-2003 (TrEMBLrel. 01-OCT-2003 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                              GO; GO:0004067; F:asparaginase activity; GO; GO:0006520; P:amino acid metabolism; GO; GO:0006528; P:asparagine metabolism; InterPro; IPR004550; AsnASE II.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AE016937; AAO77863.1; -. HSSP; P06608; 1HG1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Science 299:2074-2076(2003).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2003
01-JUN-2003
  326
                     310
                                              266
                                                                                                                190
                                                                                                                                       146
                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         260
                                                                                                                                                                                                                                                                          157;
                                                                                                                                                                                   86
                                                                                                                                                                                                         21
                                                                                                                                                                                                                                                      11
                                                                                                                                                                                                                                27
                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                     AMSADGMINIYNAVAVASNKDSRGKGVIVTMNDEIQSGRDVSKSINIKTEAFKSA-WGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NPQKARVLLQLALTQTKDPQQIQQIFNQY 348
QKSRVLLMLALTKTTDWKQIQEYFNEY
             QKARILAMVAMTKTQDSKELQRIFWEY 336
                                           GMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAKAL
                                                                                                                                                                                   NDEVWLTLAKKINELLKRPDIDGIVITHGTDTMEETAYFLNLTVKSDKPVVLVGAMRPST
                                                                                                                                                                                                   TNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRPGT
                                                                                                                                                                                                                             NVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NPQKARILAMVAMTKTQDSKELQRIFWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GIVSAGVGNGNLYKTVFDTLATAAKNGTAVVRSSRVPTGATTQDAEVDDAKYGFVASGML
                                                                                           ĠYVLNĠKVCYNQITLKKHTTQŚVFDVTKLTŚLPKVGIVÝŚYSNIEADMMTPLLNNGYKGI
                                                                                                                                        ALSADGPLNLYNAVVTAAAKESKDKG
                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                     46.5%;
                                                                                                                                                                                                                                                                            62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last
Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                                                       187E34EFC82BFCDF
                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence update)
annotation update)
                                                                                                                                                                                                                                                                                       No.
                                                                                                                                                                                                                                                                                     782; DB 2;
No. 4.3e-40;
                                                                                                                                       VLVAMNGLILGAESVVKMNTVDVQTFQAPNSGAL
   352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     352
                                                                                                                                                                                                                                                                                                                                                                                                                                       IEA
EA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₿
                                                                                                                                                                                                                                                                            106;
                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                 Length 352;
                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                          Сарв
                                                                                                                                                                                                         130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         319
                                                                    309
                                                                                           265
                                                                                                                                                              189
                                                                                                                                                                                   145
                                                                                                                                                                                                                                85
                                                                                                                                                                                                                                                      70
                                               325
                                                                                                                249
                                                                                                                                        205
```

```
AGESULT 12
AGES ECOLI
ID AGES 
        MEDLINE-91293312; PubMed=1906013; DOI=10.1016/0014-5793(91) Harms E., Wehner A., Aung H.P., Roehm K.H.; "A catalytic role for threonine-12 of E. coli asparaginase established by site-directed mutagenesis."; FEBS Lett. 285:55-58(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=80048329; PubMed=387570;
Maita T., Morokuma K., Matsuda G.;
"Amino acid sequences of the tryptic peptides from c
L-asparaginase from Escherichia coli.";
Hoppe-Seyler's Z. Physiol. Chem. 360:1483-1495(1979)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=K12 / MG1655,
MEDLINE=97426617; PubMed=9278503; DOI=10.1126/science.277.5331.1453;
Blattner F.R., Plumkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria; Gammaproteobacteria;
Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                              on J.C. Jr.;
identical subunits
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of L-asparaginase from Escherichia iol. Chem. 361:105-117(1980).
                                                                                                                                                                                            152:280-286(1972)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Handschumacher R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                coli K-12: cloning,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOI=10.1016/0378-1119(90)90168-Q;
                                                                                                                  DOI=10.1016/0014-5793(91)80723-G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptides from carboxymethylated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                        region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (L-asparagine
                                                                                                                                                                                                                                                      in
                                                                                                                                                                                                                                                   L-asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                        R.E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     L-asparaginase II, and FNR proteins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                        .;
Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amidohydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     coli.";
                                                                                                                                                                                                                                                                                                                                                                                                                                          coli
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ļ
```

5-

```
EMBL; M34277; AAA24062.1; -.
EMBL; M34234; AAA23445.1; -.
EMBL; U28377; AAA63124.1; -.
EMBL; U28377; AAA659124.1; -.
EMBL; U0096; AAC75994.1; -.
PIR; A35132; XDEC.
PDB; 11HO3; X-ray; A/C=23-348.
PDB; 11HD; X-ray; A/B=23-348.
PDB; 1JAA; X-ray; A/B=23-348.
PDB; 1JAA; X-ray; A/B-23-348.
PDB; 1JAA; X-ray; A/B-23-348.
PDB; 3ECA; X-ray; A/B-23-348.
PDB; 3ECA; X-ray; A/B-C/D=23-348.
PDB; 4ECA; X-ray; A/B-C/D=2.
ECGCORASE; EB0044; -.
ECGCORASE; EB0044; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -I- SUBUNIT: Homotetramer.
-I- SUBCRILULAR LOCATION: Periplasmic.
-I- SUBCRILULAR LOCATION: Periplasmic.
-I- INDUCTION: By CAMP and anaeroblosis.
-I- PHARMACEUTICAL: Available under the names Crastinin (Bayer),
Elspar (Merck), Kidrolase (Rhone-Poulenc) and Leunase (Kyowa).
Also available as a PEG-conjugated form (Pegaspargase) under the
name Oncaspar (Enzon). Used as an antineoplastic in chemotherapy.
Reduces the quantity of asparagine available to cancer cells.
-I- MISCELLANEOUS: KM = 1.15 x 10(-5) M
-I- MISCELLANEOUS: B.coli contains two L-asparaginase isoenzymes: L-
asparaginase I, a low-affinity enzyme located in the cytoplasm,
and L-asparaginase II, a high-affinity secreted enzyme.
-I- SIMILARITY: Belongs to the asparaginase 1 family.
-I- SIMILARITY: Balongs to the asparaginase 1 family.
                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a license agreement (See http://www.isb-sib.ch/an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                + + + + +
              EchoBASE; EB0044; -...
EcoGenne; EG10046; ansB.
InterPro; IPR004550; AspASE II.
InterPro; IPR006034; Asp/Glutamnse.
Pfam; PF00710; Asparaginase; 1.
                                                                                                                                                                                                                                                                                                                                                                            entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ++
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "A covalently bound catalytic intermediate in Escherichia coli asparaginase: crystal structure of a Thr-89-Val mutant."; FEBS Lett. 390:211-216(1996).
-I- CATALYTIC ACTIVITY: L-asparagine + H(2)0 = L-aspartate + NH(3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS).
MEDLINE=93165718; PubMed=8434007;
Swain A.L., Jaskolski M., Housset D., Rao J.K.M., Wlodi
"Crystal structure of Escherichia coli L-asparaginase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MUTAGENESIS OF THREONINE AND SERINE RESIDUES.
MEDLINE-93165634; PubMed=1287659;
Ders C., Henseling J., Roehm K.H.;
"Probing the role of threonine and serine residues of E. coli
asparaginase II by site-specific mutagenesis.";
Protein Eng. 5:785-789(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Site-specific mutagenesis of Escherichia coli asparaginase II. None of the three histidine residues is required for catalysis."; Eur. J. Biochem. 208:475-480(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MUTAGENESIS OF HISTIDINE RESIDUES MEDLINE=92394146, PubMed=1521538, Wehner A., Harms E., Jennings M.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS) OF MUTANT VAL-111.
MEDLINE=96305806; PubMed=8706862; DOI=10.1016/0014-5793(96)00660-6;
Palm G.J., Lubkowski J., Derst C., Schleper S., Roehm K.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in cancer therapy.",
Proc. Natl. Acad. Sci.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  [9]
MUTAGENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WWW="http://www.worthington-biochem.com/ASPR/".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         K.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U.S.A. 90:1474-1478(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Beacham I.R., Derst C.,
                                                                                                                                                                                                                                                                                                                                                                                                 noved. Usage by and for commercial (See http://www.isb-sib.ch/announce)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wlodawer A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    an enzyme used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                        2 2
```

```
ð
                                                    맑
                                                                             δ
                                                                                                            문
                                                                                                                                    S
                                                                                                                                                                                                                              Query Match
Best Local Sim
Matches 157;
                                                                                                                                                                                                                                                                                                                         CONFLICT
STRAND
HELIX
STRAND
TURN
STRAND
HELIX
TURN
STRAND
HELIX
TURN
HELIX
TURN
HELIX
TURN
TURN
HELIX
TURN
                                                                                                                                                                                                                           TURN
STRAND
TURN
STRAND
STRAND
TURN
TURN
STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MUTAGEN
CONFLICT
CONF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
ACT_SITE
ACT_SITE
ACT_SITE
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACT SITE
ACT SITE
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TICREAMM, TICRO0520; asnASE I; 1.
PROSITE; PS00144; ASN GLM ASE 1; 1.
PROSITE; PS00917; ASN GLM ASE 2; 1.
3D-structure; Complete proteome; Direct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Periplasmic; Pharmaceutical;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProDom; PD003221;
 140
                          129
                                                    82
                                                                                69
                                                                                                            23
                                                                                                                                        9
                                                                                                                                                                   Similarity 47.7
57; Conservative
                                                                  SITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRP
                                                                                                                           LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE
                       GTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA-WG
                                                   DMNDNVWLTLAKKIN--TDCDKTDGFVITHGTDTWEETAYFLDLTVKCDKPVVMVGAMRP
                                                                                                            LPNITILATGGTIAGGGDSATKS-NYTVGKVGVENLVNAVPQLKDIANVKGEQVVNIGSQ
STSMSADGPFNLYNAVVTAADKASANRGVLVVMNDTVLDGRDVTKTNTTDVATFKSVNYG
                                                                                                                                                                                                                                                                                                                                                                                                                           147
159
161
164
168
173
175
179
179
186
190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23
34
111
1112
1184
99
141
34
49
16
132
132
132
132
132
133
133
133
133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Asp/Glutamnse;
                                                                                                                                                                                                                            46.0%; Score 772; DB 1;
47.7%; Pred. No. 1.7e-39;
tive 59; Mismatches 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Involved in substrate binding.
T->A: Almost no activity.
V->A (in Ref. 4).
N-> D (in Ref. 4).
Missing (in Ref. 4).
Missing (in Ref. 4).
Missing (in Ref. 4).
N-> D (in Ref. 4).
N-> D (in Ref. 4).
S-> T (in Ref. 4).
S-> T (in Ref. 4).
S-> D (in Ref. 4).
Missing (in Ref. 4).
Missing (in Ref. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       왕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L-asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       / gimilarity.
/ gimilarity.
/ similarity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein sequencing; Hydrolase;
                                                                                                                                                                                             Length
                                                                                                                                                                    Indels
                                                                                                                                                                                               348
                                                                                                                                                                   4
                                                                                                                                                                   Gaps
                          187
                                                      139
                                                                                128
                                                                                                            81
```

```
RESULT
10 40444
10 4044
10 4044
10 4044
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 22
10 7 2
RESULT 14
Q7VIE4
ID Q7VIE
AC Q7VIE
AC Q7VIE
DT 01-0C
DT 01-0C
DT 01-0C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                             묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
Q7VIE4;
Q7VIE4;
01-OCT-2003
01-OCT-2003
01-MAR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q64NH4;
25-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kuwahara T., Yamashita A., Hirakawa H., Nakayama H., Kuhara S., Hattori M., Hayashi T., Ohnishi Y.; Kuhara S., analysis of Bacteroides fragilis reveals extinversions regulating cell surface adaptation."; proc. Natl. Acad. Sci. U.S.A. 0:0-0(2004).

EMBL; APO06841, BAD50958.1; -
SEQUENCE 352 AA; 38157 MW; 3379BD95053877D1 CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteroides fragilis.
Bacteria; Bacteroidetes; Bac
Bacteroidaceae; Bacteroides.
NCBI_TaxID=817;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORFNames=BF4215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-OCT-2004 (TrEMBLrel.
L-asparaginase II.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=YCH46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q64NH4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                               310
                                                                                                                                                                                                                                                                                                                                                                                              266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        188
                                                                                                                                                                                                                                                                             326
                                                                                                                                                                                                                                                                                                                                                                                                                                                         250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAKAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SDEVWLILAKKINQLLKRPDIDGIVITHGTDTMBETAYFLNLTVKSNKPVVLVGAMRPST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TNDDLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRPGT
                                                                                                                                                                                                                                                                             QKSRVLLILGLTKTNDWKQIQQYFNEY
                                                                                                                                                                                                                                                                                                         QKARILAMVAMTKTQDSKELQRIFWEY
                                                                                                                                                                                                                                                                                                                                                                                                 IHAGVGNGNFHKNILPVLLEARKKGILVVRSSRVPTGPTTMDAEVDDTQYQFIASQELNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GY I FNGKVFYNQAPLKKHTTQSVFDVTNLNSLPKVGI VYSYSNI DPDMVTPLLHHDYKGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA-WGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NIHILATGGTIAGTGGS-ATSTNYTAGQVAISTLLDAVPELKDIANVTGEQIVRIASQDM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GIVSAGVGNGNLYKSVFDTLATAAKTGTAVVRSSRVFTGATTQDAEVDDAKYGFVASGTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                         IHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDLNP
(TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.
                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38157 MW; 3379BD95053877D1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45.7%;
   25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteroides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60;
Created)
Last sequence that annoted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
Last seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 768; DB 2;
Pred. No. 3.1e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches 111;
sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence update)
                                                                                                                                                                                                                                                                                                                                     336
                                                                                                                                                                                                                                                                             352
                                                                                                                          378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (class); Bacteroidales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        352
                                                                                                                          3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₿
   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 352;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     extensive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Toh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Η.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Okada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        130
                                                                                                                                                                                                                                                                                                                                                                                                    325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  319
                                                                                                                                                                                                                                                                                                                                                                                                                                                               309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   259
   RESULT
Q6L134
Q6L134
Q6L134
QC
AC QC
DT QC
DT QC
DT QC
QC
DT QC
QC
DT QC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SQUERRY DESCRIPTION OF STREET 
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM
                                                                                                                                                                                                                                                                                                         15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                    348
                                                                                                                                                                                                                                                                                                                                                                                                                                                               306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
```

```
Pfam; PF00710; Asparaginase; 1.
ProDom; PD003221; Asp/Glutammse; 1.
TIGRFAMS; TIGR00520; asnASE II; 1.
PROSITE; PS00144; ASN GLN ASE 1; 1.
PROSITE; PS00917; ASN GLN ASE 2; 1.
Complete proteome; Hydrolase;
SEQUENCE 378 AA; 40858 MW; 45FDD2
                                             O6LI34; PRELIMINARY; PRT; 354 AA.
Q6LI34; Q6LI34;
O5-JUL-2004 (TrEMBLrel. 27, Created)
O5-JUL-2004 (TrEMBLrel. 27, Last sequence up
O5-JUL-2004 (TrEMBLrel. 27, Last annotation
Putative periplaemic L-asparaginase II.
Name=Y2787; OrderedLocusNames=PBPRB1174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Helicobacter hepaticus ";
Proc. Natl. Acad. Sci. U.S.A. 100:7901-7906(2003).
EMBL; AE017146; AAP77259.1; -.
HSSP; P06608; 1HG1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-22709201; PubMed=12810954; DOI=10.1073/pnas.1332093100; Suerbaum S., Josenhans C., Sterzenbach T., Drescher B., Brandt P. Sell M., Droege M., Fartmann B., Fischer H.-P., Ge Z., Hoerster A Holland R., Klein K., Koenig J., Macko L., Mendz G.L., Nyakatura Schauer D.B., Shen Z., Weber J., Frosch M., Fox J.G.; "The complete genome sequence of the carcinogenic bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=ATCC 51449
MEDLINE=22709201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Helicobacter hepaticus.
Bacteria, Proteobacteria, Epsilonproteobacteria, Campylobacterales,
                        Photobacterium profundum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GO; GO:0004067; F:asparaginase activity; IGO; GO:0016787; F:hydrolase activity; IEA.
GO; GO:0016520; P:amino acid metabolism; IGO; GO:0006520; P:asparagine metabolism; IGO; GO:0006520; P:asparagine metabolism; IIInterPro; IPR004550; AsnASE II.
InterPro; IPR006034; Asp/Glutamnse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Helicobacteraceae; Helicobacter.
NCBI_TaxID=32025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Name=ansB; OrderedLocusNames=HH0662;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            L-asparaginase (EC 3.5.1.1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                         DLNPQKARVLLMLALTOTKNSAEIAKIFORY 378
                                                                                                                                                                                                                                                                                                                                                            DLNPQKARILAMVAMTKTQDSKELQRIFWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                          TKGLVIAGSGAGSIHKNHKDMLKKLMQEGLIVVQSSRINNGIVL--ASBADAKLGFIGSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GDMGYILDGKVFFYTFPNKPHTTHSEFDVRSLRSLPKVDILYSYANDGLAIAAQALANQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGN-VTDTAYKALAQNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTEAFKSA-W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADMNDEIWLTLAQRVNKLLENPKIDGIVITHGTDTMEESAFFLHLTTRSDKPVVLTGAMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KKPNIVILATGGTIAGAVDSQIKTTGYNAGVISVDTLIEAVPQLQEIAHIQGEQIANIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3B1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45.7%; Score 767; DB 2; 47.4%; Pred. No. 3.8e-39;
(Photobacterium sp. (Gammaproteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        45FDD24FB9FE9FAA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IEA.
                                                                                                   on update)
(strain SS9)).
1; Vibrionales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                  347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67
```

```
Search completed: March 18, 2005, 21:29:40 Job time : 183 secs
                                                              ঠ
                                                                                     밁
                                                                                                      र्
                                                                                                                                 밁
                                                                                                                                                 र्
                                                                                                                                                                           문
                                                                                                                                                                                             र्
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                         Query Match 45.6%; Score 766; DB 2; Length 354; Best Local Similarity 47.1%; Pred. No. 4.1e-39; Matches 155; Conservative 68; Mismatches 104; Indels
                                                                                                                                                                                                                                                                                                                                                  high pressure adaptations.";
Submitted (MAR-2004) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vezzi A., Campanaro S., D'Angelo M., Simonato F., Vitulo N., Lauro F.,
Cestaro A., Malacrida G., Simionati B., Cannata N., Bartlett D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Vibrionaceae, Photobacterium
NCBI_TaxID=74109,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Genome analysis of Photobacterium profundum reveals the complexity of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                          326
                                                                 308
                                                                                     266 GIVSÁGVGNGNMYHTIFDQLVKASKDGTMVVRSSRTPTGSTTLDÁBVDDAKFGFVASGTÍ 325
                                                                                                           248
                                                                                                                                 206 TLGYIHNGDVKYQRSPERKHTSDTVFDVSKLKELFKVGIVYNYANASDLPVKALIDAKYD 265
                                                                                                                                                      188
                                                                                                                                                                                                                     27
                                                                                                                                                                                                                                                                          9 LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE 68
                                         NPQKARILAMVAMTKTQDSKELQRIFWBY 336
                                                                                                         ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNABQPDDKNDWVVAHDL 307
                                                                                                                                                PLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK 247
                                                                                                                                                                                                                                                               LPNIKILATGGTIAGAGQSATES-NYTSGKVGIDELIAAVPDMTKIADISGEQVVKIGSQ 85
                                                                                                                                                                                                                                                                                                                                                    354 AA, 37904 MW; 92C77408FDC1CE32 CRC64;
                                                                                                                                                                                                                                                                                                          2
                                                                                                                                                                                                                                                                                                         Gaps
```

This Page Blank (uspto)

```
Regult
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                              219
189.2
145.6
138
138
138
89.4
82.6
78.4
75.8
                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0
seq length: 2000000000
                                                                                                                                                                                                  100.0
21.6
18.7
                                                                                                                                                                                                                                                                                            Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Published Applications NA:*

1: /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*

2: /cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*

3: /cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*

4: /cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*

5: /cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              March 22, 2005, 10:20:21; Search time 702 Seconds (without alignments) 8599.100 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5544816 segs, 2976611598 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 aaggaagtggagaaccagca.....tttcctgggaatactgataa 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-842-628-1
                                14.4
13.6
13.6
8.8
8.1
7.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.6 Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           / cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US09B_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US09E_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US108_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10D_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10D_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
                                                                              1196
1830121
1830121
437
990
                                                                                                                                                                                                                                ဖ ဖ
                         9 US-09-842-628-1

9 US-09-773-260-3

16 US-10-406-025-1

10 US-09-882-227-83

17 US-10-329-670-1

18 US-10-158-865-1

18 US-10-425-115-43132

19 US-10-425-115-43132

19 US-10-029-386-22613

18 US-10-029-386-22613

18 US-10-029-386-22618
                                                                                                                                                                                                                                                                                                      ╏
                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
Sequence 1, Appli
Sequence 3, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 21313, A
Sequence 22613, A
Sequence 22513, Appli
Sequence 20582, A
Sequence 20582, A
                                                                                                                                                                                                                                                                                                 Description
```

										ი					ი						ი		a	ဂ	a								
45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12
64	64	64.4	64.4	64.6	64.6	65	65	65.2	65.2	65.2	65.4	65.4	65.4	65.4	66.2	66.4	66.4	66.8	67	67.2	67.2	68.6	68.6	68.6	69	69	69	69.2	69.4	70	70	72.2	72.2
6.3	6.3	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.5	6.5	6.5	6.6	6.6	6.6						6.8	6. 8		6.8	6.9	6.9	7.1	7.1
1312	1107	5392	1268	36321	786	1485	1398	1761	1089	871	64492	2662	2475	1444	6682	9025608	1725	1659	1512	828	791	985	985	779	9025608	1758	1314	1605	1749	2718	2364	2162598	960
18	15	18	18	15	15	18	17	15	15	16	17	17	17		9	15	18	18	18	16	16	18	18	16	15	18	15	15	18	18	18	19	19
US-10-437-963-29596	US-10-156-761-2234	US-10-716-803-1	US-10-716-803-2	US-10-187-267A-1	US-10-187-267A-32	US-10-411-910A-267	US-10-369-493-31934	US-10-156-761-3138	US-10-156-761-6834	US-10-029-386-20422	US-10-378-083-1	US-10-425-114-16619	US-10-260-238-5598	US-10-767-701-12575	US-09-070-927A-56	US-10-156-761-1	US-10-411-910A-196	US-10-425-115-150483	US-10-425-115-150486	US-10-029-386-25443	US-10-029-386-20494	US-10-363-345A-31408	US-10-363-345A-31407	US-10-029-386-20935	US-10-156-761-1	US-10-411-910A-209	US-10-156-761-1793	US-10-259-165-297	US-10-411-910A-218	US-10-738-986-15	US-10-473-687-3	US-10-472-928-4979	US-10-472-928-4159
29596,	22	۲,	'n	۲,	32			3138,		20422		16619,		Sequence 12575, A	٠.		196			Sequence 25443, A			Sequence 31407, A	Sequence 20935, A	Sequence 1, Appli	209, 7	Sequence 1793, Ap	297	Sequence 218, App	Sequence 15, Appl		•	Sequence 4159, Ap

## ALIGNMENTS

```
GENERAL INPORMATION:

GENERAL INPORMATION:

APPLICANT: MACALLISTER, THOMAS W.

APPLICANT: METHIRAMAN, NATARAJAN

APPLICANT: SETHIRAMAN, NATARAJAN

APPLICANT: FREEMAN, ABBIE G.

TITLE OF INVENTION: GENETICALLY ENGINEERED GLUTAMINASE AND TITLE OF INVENTION: ANTIVIRAL AND ANTICANCER THERAPY

FILE REFERENCE: 02302/0108

CURRENT APPLICATION NUMBER: US/09/842,628

CURRENT FILING DATE: 2001-04-27

PRIOR APPLICATION NUMBER: 08/050,482

PRIOR FILING DATE: 1995-04-25

PRIOR APPLICATION NUMBER: DET/US92/10421

PRIOR APPLICATION NUMBER: DET/US92/10421

PRIOR PILING DATE: 1995-12-04

PRIOR FILING DATE: 1991-12-04

PRIOR FILING DATE: 1991-12-04

PRIOR FILING DATE: 1991-12-04

PRIOR FILING DATE: 1991-12-04
                                                                                                            ; LENGTH: 1014
; TYPE: DNA
; ORGANISM: PBeudomonas s
; PEATURS:
; NAMEXKEY: CDS
; LOCATION: (1)...(1008)
US-09-842-628-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 1
US-09-842-628-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application US/09842628 Patent No. US20020064862A1
Query Match 100.0%; Score 1014; DB 9; Best Local Similarity 100.0%; Pred. No. 4.1e-259; Matches 1014; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 1
                                                                                                                                                                                                                            gp.
                                                  Length 1014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ITS USE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ä
```

0,

Gaps

8 밁 ક 밁

```
AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACC
      Application
                                                                                                                                                                                                  ACCAAGACCCAGGACAGGAGCAGGAGCTGCAGCGCATTTTCTGGGAATACTGATAA 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATCGTCATCACCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCGCCGGCGCTGGCGCCAGCGCGGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCGCACC
                                                                                                                                                                                                                                                                                                                                 TGGGTCGTGGCCCACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                               TCACGTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCAACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGTAGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGAAGGCCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCGCCGGCGCTGGCGCCAGCGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC
                                                                                                                                                               ACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATTTTCTGGGAATACTGATAA 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCACGTCAACAGGGCGGTTTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGCCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCGTGGTCGGTTCCATGCGCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCCATGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAAGAAACCGCCTACTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
      US/09773260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 1133 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
SEQUENCE DESCRIPTION: SEQ ID
US-09-773-260-3
                                                                                                                                                  δ
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PATENT NO. US20020102251A1

GENERAL INFORMATION:

APPLICANT: Donald L Durden

TITLE OF INVENTION: UTILIZATION OF WOLINELLA SUCCINOGENES

ASPARAGINASE IN THE TREATMENT OF HUMAN
HEMATOLOGIC AND AUTOIMMUNE DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Simi
Matches 521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEX: 67-3510
INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/09/773,260
FILING DATE: 31-Jan-2001
CLASSIFICATION: <UNKnown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/094,435
FILING DATE: 1998-06-09
APPLICATION NUMBER: <UNKnown>
FILING DATE: <UNKnown>
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Warburg, Richard J.
REGISTRATION NUMBER: 32,327
REFERENCE/DOCKET NUMBER: 234/274
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: U.S.A.
ZIP: 90071-2066
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
                                      329
                                                                                                                                                                                                                            305
                                                                                                                                                                                                                                                                                                                                                        245
                                                                                                                                                                                                                                                                                                                                                                                                                  149
                                                                                                    365
                                                                                                                                                               269
                                                                                                                                                                                                                                                                                          209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128 CCCAAGTGACTATCCTAGCCACAGGAGGCACCATCGCTGGTTCGGGGGAATCTAGCGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29 CCAACGTGGTGATCCTGGCCACCGGCGGCGCCACCCATCGCCGGCGCGGCGCGGCCAGCGCGGCCA 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
AGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGG 148
                                                                                                                                              ACGTCGATGGCATCGTCATCACCCATGGCACCCGACACCCTGGAAGAAACCCGCCTACTTTT
                                                                                                                                                                                                                                TGÁCGGGTAÁGGTGTGGCTTÁAACTAGCCÁAGCGTGTCAATGÁGCTCCTCGCCCAAAAAG
                                                                                                                                                                                                                                                                                       тсассласодствестственностость под применения под применения примене
                                                                                                                                                                                                                                                                                                                                                     CCATCAACGACCTAGCCACCATCAAGGGTGAACAGATCTCAAGCATTGGCTCCCAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAG---TAGCTACTCTGCTGGAGCAGTCACCGTTGATAAGCTTCTTGCAGCCGTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (213) 489-1600
TELEFAX: (213) 955-0440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Los Angeles
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Lyon & Lyon
STREET: 633 West Fifth
                                                                                                 AGACCGAAGCCGTGATCATCACCCATGGAACTGACACCATGGAAGAGACCGCTTTCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 219; DB 9; Length 1133; Pred. No. 3.7e-48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOS 5.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            u.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                      208
                                                                                                                                                                                                                                                                                                                                                           304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               187
                                             388
                                                                                                           424
                                                                                                                                                                  328
                                                                                                                                                                                                                                364
                                                                                                                                                                                                                                                                                             268
```

į

RESULT 2 US-09-773-260-3 , ; Sequence 3, Ap

유정

961

문 र् 밁 5 문 5

901

901

841 841 8

밁 S 밁 Ś 밁 S 밁 S 밁 ঠ 밁 ঠ 문 र् 맑 S 밁

541

481 481 421 421 361 361 301 301 241 241 181 181 121 121 61 61 \_ μ

GACACCCI

밁 र् 밁

```
TITLE OF INVENTION: Methods for producing sec
TITLE OF INVENTION: Methods for producing sec
TITLE OF INVENTION: Methods for producing sec
TITLE OF INVENTION: Methods (025)
CURRENT APPLICATION NUMBER: US/10/406,025
CURRENT FILING DATE: 2003-04-01
PRIOR APPLICATION NUMBER: US 60/369,192
PRIOR FILING DATE: 2002-04-01
NUMBER OF SEQ ID NOS: 8
SOFTWARE: PatentIn version 3.2
SEQ ID NO 1
LENGTH: 1128
TYPE: DNA
ORGANISM: Bacillus subtilis
US-10-406-025-1
                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
US-10-406-025-1
US-10-406-025-1
J Sequence 1, Application US/10406025
J Publication No. US20030186380A1
J GENERAL INFORMATION:
J APPLICANT: No. US20030186380A10zymes Biotech,
J APPLICANT: Thomas, Michael D.
J APPLICANT: Sloma, Alan
J APPLICANT: Sloma, Alan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
  Query Match 18.7%;
Best Local Similarity 50.2%;
Matches 498; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCAAGAGGCTGAAGTGGATGATAAGAAACTTGGTTTTGTGGCTACAGAGAGTCTCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCTGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGCCGGGTGGTGCCAGCCCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGC 745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAĞCĞACCAAĞCTCAACACCACCGCAGTCAATĞCATTTGCTTCĞCCCAACACAGGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCAAAAGATCTTCTCCACCTATTAAT 1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCAGCGCATTTTCTGGGAATACTGAT 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCAAAAAAGCCAGAGTGCTTCTTATGTTAGCCCCTCACCAAAACTAGTGATAGAGAGGCGA 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGGACCCAGGAACAGCAAGGAGC 985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGCGCAAGAACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCÁCCCCGÁTGATÁCTGÁTGTTTTAGTCÁÁTGCAGCCCTTCÁGGCAGGAGCCÁÁAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGCAAGTGAGTTTGATATTAGCAAAATCGAAGAACTCCCCAGAGTCGATATTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGGCACAGTCTATTATGGCAAAGTCGAGTATTTCACTCAATCCGTTCGACCTCACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGGCATGGTGGTAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAGCCTCTACTAACAAAGGAGTGGTGATTGTGATGAACGATGAGATTCACGCCGCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGACTCGCGCGCGAGGGGCGTGCTGGTGACCATGAACGACGAGGATCCAGTCCGGGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCCATGAGTGCTGATGGCCCCATGAATCTCTATAACGCCGTGAATGTAGCGATCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cceccarercecceaceecarecreaaccreracaaceecereeccereecaacaaca 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAACCTCACGGTGAAAAGCCAAAAACCTGTCGTCCTTGTAGGCGCCATGCGTCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCAGCCAAATCAGGCGTAGTCGTCGCTCGAAGCTCTAGAGTGGGCAGTGGTTCCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCATCCATGCAGGCATGGGCAATGGGAACCCTTTCCCTTTGACTCAAAATGCTCTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGTGAGCAAGTCGATCAACATCAAGACCGGAAGCCTTCAA---GAGCGCCTGGGGCCCGC
Score 189.2; DB 16;
Pred. No. 2.9e-40;
0; Mismatches 488;
                                                                                                                                                                                                                                                                                                                                                                                                                        secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                        polypeptides having L-asparaginas
       Indels
                                                   Length 1128;
     6,
       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              484
     ۲,
                                                                                                                                                                                                                                                                                                                  В
  RESULT 4
US-09-882-227-83
; Sequence 83, A
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                           1037
                                                                                                                                                                                                                                                                                                                       983
                                                                                                                                                                                                                                                                                                                                                                        860
                                                                                                                                                                                                                                                                                                                                                                                                                        923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCCGCTGGGCATGGTGGAAAGGCCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCCCGGCACCGCCATGTTCCGCCGACGGCATGCTCAACCTTGTACAACGCCGTGGCCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCCTGGAAGAAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGTTCCAGAAATGAAGGACATTGCAAACGTCAGCGGCGAGCAGATTGTTAACGTCGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAAAACCTCAACAACTGAATATAAAGCAGGTGTTGTCGGCGTTGAATCACTGATCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGATCTGCCAAACATTAGAATTTTAGCGACAGGAGGCACGATAGCTGGTGCCGATCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACCATCGCCGGCGCGCTGGCGCA 79
                                                                                                                                                           AGGAGCTGCAGCGCATTTTCTGGGAATACTGA 1011
                                                                                                                                                                                                                           TAAACCCCCAAAAAGCACGGATGTTGCTGATGCTTGCGCTTACCAAAACAAATGATCCTC 1096
                                                                                                                                                                                                                                                                                                                                                                                                                      CGGACAGCGCAGTCAAAAAAAGGCGTTACAGTGGTGCGCTCTACCCGCACGGGAAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTATGGATACCAAAATGACGGAAGCTACCTGTTTGACGCTGCTGAAAAGCCGGAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCCCGATATGTCACCAAAACAAACACAACTACAACAGATACATTTAAATCAGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGTGCCCCTGAGGCAAAAGGGAAAGGGACGCTTGTTGTTCTTAACGACCGGATTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACCTTCCACAGCCATCAGCGCTGATGGGCCTTCTAACCTGTACAATGCAGTGAAAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTATTTTTTGAATCTTACCGTGAAAAGTGATAAACCGGTTGTTATTGTCGGTTCGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTCAGATGATGTAGACGGAATCGTCGTGACTCATGGAACAGATACATTGGAGGAAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCACAAATATTGATAATAAAATATTGCTGAAGCTGGCGAAACGCATCAACCACTTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCT 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGCGGCCAACAGCGCCACCTACCAGGCTGCCCAAGGTTGGCGTCGACAAGCTGATTGCCG 139
                                                                                                                             AAAAATCCAAGCTTATTTCAATGAGTATTGA
                                                                                                                                                                                                                                                                       TGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCA
                                                                                                                                                                                                                                                                                                                          TCGTCACACCAAAC-----CAAGACTATGCGGAAAAAGGACTTGCTGGCATCGAACTCTT
                                                                                                                                                                                                                                                                                                                                                                  тсетвествествансвессвання в представления пре
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGGGATTGTATTTGCCCGGTTCTGGGAACGGGTCTTTATCTGATGCAGCCGAAAAAGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATACGAAGGACACGGATTTCTCGGTTTCTAATCTTGATGAGCTGCCGCAGGTTGACATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGGCTTCGTCGGAACAATTGCAGATGATATCTATTTTAATAATGAGATTACCCGTAAGC
  Application US/09882227
                                                                                                                                                                                                                                                                            . 979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          862
                                                                                                                                                                                                                                                                                                                                                                                                                           982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262
```

```
밁
                                                                                                S
                                                                                                                                  문
                                                                                                                                                             ঠ
                                                                                                                                                                                                    문
                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: CDS; LOCATION: (41)...(1132)
US-09-882-227-83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: FastSEQ for Windows Version SEQ ID NO 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Publication
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/09/882,227
CURRENT FILING DATE: 2001-06-15
PRIOR APPLICATION NUMBER: US 08/902,615
PRIOR FILING DATE: 1997-07-29
NUMBER OF SEQ ID NOS: 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Tomb, Jean-Francois
APPLICANT: Ocomen, Raymond P.
APPLICANT: Ocomen, Raymond P.
TITLE OF INVENTION: Identification of Polymucleotides
TITLE OF INVENTION: Encoding No. US20030158396Alel Helicobacter Polypeptides in
TITLE OF INVENTION: Genome
FILE REFERENCE: 06132/047002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Helicobacter
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 1196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tion No. US20030158396A1 INFORMATION:
                                                                                                                                                                                                       548
728
                                 598
                                                                   899
                                                                                                  541
                                                                                                                                     809
                                                                                                                                                                       481
                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                           488
                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                             428
                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGGGCAGGTTATGGCTCAAAAATTTACCCCACCATTGCTTTACTGGCGACAGGGGGGACG 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kleanthous, Harold
                                                                   ACCTTTAAAGCCTTAAATAGCGGCGCGATAGGGAACGTGTATTATGGCAAAACGCGCTAT
                                                                                                   GCCTTCAAGAGC---GCCTGGGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGG
                                                                                                                                                                       ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                         TATAATGCTGTGAGCGTAGCGCTCAATGAAAAAGTGCGAATAAAGGCGTGTTAGTGGTG
                                                                                                                                                                                                                                        TACAACGCCGTGGCCGTGGCCAGCAACAAGGGACTCGCGGCGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                           GTGCTGGTGGGAGCGATGCGTAATGCTGCTTCTTTGAGCGCGGATGGGGCTTTGAATTTA
                                                                                                                                                                                                                                                                                                                                             GACACTTTAGAAGAGAGCGCGTATTTTTTAAACTTAGTTTTTACGCTCCACAAAACCGGTC
                                                                                                                                                                                                                                                                                                                                                                            GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                 CGTGCCCAAGAATTGCTAGATGATAGCCGTATTCAAGGCGTGGTCATCACGCATGGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGCAGGGAGTGCTGCGAGCGCG---AGTTTGGGTAGTTATAAGAGTGGTGAGTTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCGCCGGCGCTGGCGCCAGCGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGC
TACATGCAGCCTTTGAGAAAACACACACAGAGAGCGAATTTTCCCTTTCACAACTCAAA 787
                                TTCCGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATC---
                                                                                                                                     CAGATTTCTAACATCGGCTCACAAGACATGAATGAAGAGGTATGGTTCAAGCTCGCCAAA 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Al-Garawi, Amal
Miller, Charles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 145.6; DB 10; Length 1196; Pred. No. 1.1e-28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches 419;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                 654
                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                             547
                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                  727
                                                                                                   597
                                                                                                                                     667
                                                                                                                                                                       540
                                                                                                                                                                                                         607
                                                                                                                                                                                                                                                                                                                                                                                                                   427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                             487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the
```

```
유성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-329-670-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILE REFERENCE: PB186P1
CURRENT APPLICATION NUMBER: US/10/329,670
CURRENT FILING DATE: 2002-12-24
PRIOR APPLICATION NUMBER: US 09/643,990
PRIOR FILING DATE: 2000-08-23
PRIOR APPLICATION NUMBER: US 08/487,429
PRIOR PFLING DATE: 1995-06-07
PRIOR FILING DATE: 1995-06-07
PRIOR FILING DATE: 1995-04-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/10329670
Publication No. US20040018503A1
GENERAL INFORMATION:
APPLICANT: Fleischmann et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: Nucleotide Sequence of the Haemophilus influenzae Rd Genome, Fragm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (9921)..(9921)
OTHER INFORMATION: n equ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Haemophilus influenzae FEATURE:
NAME/KEY: misc feature
LOCATION: (4747)...(4747)
OTHER INFORMATION: n equals a, t
FEATURE:
                                                                  NAME/KEY: misc feature
LOCATION: (36636)...(36636)
OTHER INFORMATION: n equals
                                                                                                                     FEATURE:
NAME/KEY: misc feature
LOCATION: (36551)..(36551)
OTHER INFORMATION: n equals
FEATURE:
                                                                                                                                                                                                         FEATURE: m1sc_feature
NAME/KEY: m1sc_feature
LOCATION: (36543)...(36543)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                             LOCATION: (29298)..(29298)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                 NAME/KEY: misc_feature
LOCATION: (29298)..(29
                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (10150)..(10150)
OTHER INFORMATION: n equals
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE
NAME/KEY: misc_feature
LOCATION: (40808)..(40810)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                               LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    788 ACCCCCTGCCTAAAGTGGATATTATTTACACGCATGCTGGCATGACCCCTGATTTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1830121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTTCGTCACGTCAACAGGGCGGT 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGTTCTAGCAGGGTAAATAGCGGT 991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ĠŦĠAGCGĊŦĠĠĠŦŤŦŦŦAAAĀĠĊĠAŤĠĊĀAĠĀAGCĠĀĠĊĊĀAĀŦĠĠĠĠĠŦĠĠŦŦAŦŦĠŦŦ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGTCGTCGCGGGTGGTGCCAGCCCTGCAGGAGCTGCGAAGAACGGCGTGCAGATCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGGCCCTGGCACAGAACGCCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAGCCTGCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                   equals
                                                                                                                                                                                                                                                                                                                                                 a,
                                                                     а,
                                                                                                                                         8
                                                                                                                                                                                                             e,
                                                                                                                                                                                                                                                                                 en
(u
                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                     ŗ
                                                                                                                                         ,
                                                                                                                                                                                                           ŗ
                                                                                                                                                                                                                                                                               ŗ
                                                                                                                                                                                                                                                                                                                                                 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŗ
                                                                     ω
                                                                                                                                         ω
                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                             φ
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                       õ
                                                                                                                                           မှု
                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                       a
                                                                                                                                           a
                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    847
```

a,

ŗ

ω

õ

o

```
NAME/KEY: misc_feature
LOCATION: (105121)
OTHER INFORMATION: n equals a,
FEATURE:
NAME/KEY: misc_feature
LOCATION: (107248) . (107248)
OTHER INFORMATION: n equals a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
LOCATION: (44416). (44416)
OTHER INFORMATION: n equals
PEATURE:
NAME/KEY: misc_feature
LOCATION: (44905). .(44905)
OTHER INFORMATION: n equals
                                                                                          NAME/KEY: misc feature
LOCATION: (102696)..(102696)
OTHER INFORMATION: n equals
                                                                                                                           PEATURE:

NAME/KEY: misc_feature

LOCATION: (100091)..(100091)

OTHER INFORMATION: n equals

PEATURE:
                                                                                                                                                                           FEATURE:
NAME/KEY: misc_feature
LOCATION: (80024)...(80024)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                    NAME/KBY: misc feature
LOCATION: (65313)..(65313)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                             NAME/KEY: misc_feature
LOCATION: (65309)..(65309)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                 PEATURE:
NAME/KEY: misc_feature
LOCATION: (51602)...(51602)
OTHER_INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature
LOCATION: (51334)..(51334)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature
LOCATION: (45732)..(45732)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KBY: misc_feature
LOCATION: (45593)..(45593)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_feature
LOCATION: (44975)..(44975)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (55369)..(55369)
OTHER INFORMATION: n equal
                                                                                                                                                                                                                                                                                                                                                  LOCATION: (51805).
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                               NAME/KBY: misc_feature
LOCATION: (51786)..(51786)
OTHER INFORMATION: n equal
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_feature
LOCATION: (47036)..(47036)
OTHER INFORMATION: n equal
                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature
LOCATION: (51805)..(51805)
EATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       n equals
                                                                                                                                                                                                                                                                                                        n equals
                                                                                                                                                                                                                                                                                                                                                  n equals
                                                                                                                                                                                                                                                                                                                                                                                          n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n equale
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    þ
                                                                                            а,
                                                                                                                                   a,
                                                                                                                                                                             В,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Α,
         а,
                                                  ρ,
                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                              а,
                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                 a,
                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                    a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          а,
                                                                                                                                   ŗ
                                                                                                                                                                            ŗ
                                                                                                                                                                                                                                                             Ĺ
                                                                                                                                                                                                                                                                                                                                                 ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                    ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ĺ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ĺţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŗ
         Ç
                                                  ŗ
                                                                                            Ç
                                                                                                                                                                                                                      ŗ
                                                                                                                                                                                                                                                                                                       ŗ
                                                                                                                                                                                                                                                                                                                                                                                          ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ú
                                                                                                                                   g
                                                                                                                                                                            9
                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
        Q
                                                  g
                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ម្ព
          õ
                                                  ç
                                                                                            မ္
                                                                                                                                      õ
                                                                                                                                                                             ö
                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ů
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ę
          a
                                                  a
                                                                                            a
                                                                                                                                      ი
                                                                                                                                                                              n
                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                            O
                                                                                                                                                                                                                                                                                                                                                                                                                                     ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ი
```

```
OTHER INFO...
PEATURE:
NAME/KEY: misc feature
LOCATION: (145058)..(145058)
OTHER INFORMATION: n equals a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:

NAME/KEY: misc feature
LOCATION: (121344)..(121344)
OTHER INFORMATION: n equals a,
FEATURE:
NAME/KEY: misc feature
LOCATION: (122167)..(122167)
OTHER INFORMATION: n equals a,
                                                                                                                                                                                    OTHER INFORMATION: n equals a FRATURE:
NAME/KEY: misc feature
LOCATION: (145171)..(145171)
OTHER INFORMATION: n equals a FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER IN
FEATURE:
                   FEATURE:
NAME/KEY: misc feature
LOCATION: (152500)..(152500)
OTHER INFORMATION: n equals
                                                              NAME/KEY: misc_feature
LOCATION: (150841)..(150841)
OTHER INFORMATION: n equals
                                                                                                        OTHER INFORMATION: n equals FEATURE: FEATURE: NAME/KEY: misc_feature LOCATION: (147197)...(147197) OTHER INFORMATION: n equals
                                                                                                                                                 NAME/KBY: misc feature
LOCATION: (145942)..(145942)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                              NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                             FEATURE:
NAME/KEY: misc_feature
LOCATION: (140398)..(140398)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_feature
LOCATION: (139910)..(139910)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature
LOCATION: (122336)..(122336)
OTHER INFORMATION: n equals
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEATURE: misc feature
NAME/KEY: misc feature
LOCATION: (119750)...(119750)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: (117136)..(117136)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: misc_feature
LOCATION: (131360)..(131360)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                               OTHER
                                                                                                FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEY: misc feature ION: (131340)..(131340) INFORMATION: n equals
                                                                                                                                                                                                                                                                                 KBY: misc_feature
ION: (142750)..(142750)
INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CBY: misc feature
ION: (119924)..(119924)
INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
(120038)..(120038)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (117136)
                                                                                                                                                                                                                                                                                                                                                                      ρ.
                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                     ø
                                                                a
                                                                                                          ø
                                                                                                                                                     þ
                                                                                                                                                                                              ā
                                                                                                                                                                                                                                        þ
                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                             þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D
                                                                                                                                                                                                                                                                                                                         <u>G</u>,
                                                                                                          ŗ
                                                                                                                                                                                              ŗ
                                                                                                                                                                                                                                                                                  ŗ
                                                                                                                                                                                                                                                                                                                                                                         ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ç
                     ŗ
                                                                ŗ
                                                                                                                                                    ŗ
                                                                                                                                                                                                                                        ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                  Ĺ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ĺ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŗ
                     ω
                                                               g
                                                                                                          ω
                                                                                                                                                                                              g
                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ιQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                     ç
                                                                 않.
                                                                                                          ö
                                                                                                                                                                                               or
                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                              ç
                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             မ္
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       မ္
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ů
                                                                                                                                                     ç
                                                                                                                                                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ŗ
                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O
                                                                                                                                                     O
```

Fragn

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 474;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        803026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        802735
                                                          803626
                                                                                                                                                                        803566
                                                                                                                                                                                                                                                                                    803506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            803086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     802912
                                                                                                                 937
                                                                                                                                                                                                                             877
                                                                                                                                                                                                                                                                                                                                           817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100
  997
                                                                                                                                                                                                                                                                                                                                                                                                                                                       757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40 ATCCTGGCCACCGGCGCACCATCGCCGGCGCTGGCGCCAGCGCGCCAACAACAGCGCCACC 99
                                                                                                                                                                                                                                                                                    GATAGCGTCGTTGTAGTCCGTTCTTCTCGTGTACCAACGGGTTATACAACTCGTGACGCT 803565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATAACAGCAAAGTGGACTATGAACGTTCCCCCAGAAAGCAAACATACCATCAACACTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGATGGCCCATTAAATCTTTACAATGCTGTCGTTGTCGCAGCAGACAAAAATCAAGT 803145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTAAAATGTGAAAAAACCGGTTGTTCTCGTTGGGGCAATGCGTCCTGCAACAGAAAAAAGT 803085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTGTCATTACCCATGGTACAGATACCATGGAAGAGACGGCTTATTTCTTAGATTTAACC 803025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGAC 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCTTGGCAACGGGTGCTACCATTGCAGGAAGCGGGCAAAGTTCGGTAAA---TTCTGCG 802791
                                                                                                                                                                        GAAGTTGATGATAGTAAATATGGCTTTGTAGCATCAGGTACTTTAAATCCACAGAAAGCC
                                                                                                                                                                                                                          GAGCAGCCCGACGACAAGAACGACTGGGTCGTCGCCCACGACCTGAACCCCGCAGAAGGCC 936
                                                                                                                                                                                                                                                                                                                                                                                                GGAGTTGGCAATGGAAATGTTAATGCTGCACACTTAGATCGCTTAGAAAAAGCCGCAAAA 803505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCACCTGTCGAACCATTAAACGCATTACTCAATGCTGGCTATCAAGGGATTGTATCTGCA 803445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GECAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAG 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAAGACCGACAAGCCGATCGTCGTCGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCC
                                                          CGCGTGCTCTTGCAATTAGCTTTAACTCAAACTAAAGATCCNAAAGTAATTCAACAATAT 803685
                                                                                                                                                                                                                                                                                                                                        AACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGCTGCGTAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCACCGGCAATGGCTCGGTGTCGCGGGGTGGTGCCAGCCCTGCAGGAGCTGCGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCAGTACGACCGCAGTGCAAACGTTCCATTCACCAAATTATGGTTCTCTAGGCTATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGATCAACATCAAGACCGAAGCCTTCAAGAGCGC---CTGGGGCCCGCTGGGCATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTCGTGGTGTTTTAGTCGCAATGAATAATGAAGTACTAGGTGCTCGCGATGTAACAAAA 803205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTG 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCTGGCTAAAACTGGCAAAAGCCATCAATGCTCAATGTAAAAGTACT-----GATGGA 802965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGC 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATAAAGCTGGACAATTAAGTATTGATACTTTAATTGAAGCTGTACCAGAAATGAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGAC 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (152530)..(152530)
TTCTGGGAATACTGATA 1013
                                                                                                                 CGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACAGCTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 138; DB 17;
Pred. No. 2.7e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1830121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      459
                                                                                                                 996
                                                                                                                                                                                                                                                                                                                                           876
                                                                                                                                                                                                                                                                                                                                                                                                                                                          816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               802851
                                                                                                                                                                        803625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            803325
```

문 δ 밁 S 밁 S 밁 ঠ 밁 ঠ 밁 S 밁 ঠ 밁 S 밁 δ 문 S 밁 ঠ 밁 ঠ 밁 ঠ 밁 δ 밁 S 밁 S 밁

```
US-10-158-865-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS:
SOPTWARE: PatentIn ver
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/10158865 Publication No. US20040203093A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Nucleotide Sequence of the Haemophilus Influenzae Rd Genome, TITLE OF INVENTION: Thereof, and Uses Thereof FILE REFERENCE: PB18672C1D1 CURRENT APPLICATION NUMBER: US/10/158,865 CURRENT FILLING DATE: 2002-06-03 PRIOR APPLICATION NUMBER: US 09/557,884 PRIOR FILING DATE: 2000-04-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US 08/476,102
PRIOR FILING DATE: 1995-06-07
PRIOR APPLICATION NUMBER: US 08/426,787
PRIOR FILING DATE: 1995-04-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Fleischmann et al.
                                                   FEATURE:
NAME/KEY: misc feature
LOCATION: (44975)..(44975)
OTHER INFORMATION: n equals
FEATURE:
                                                                                                                                PEATURE: misc_feature
NAME/KEY: misc_feature
LOCATION: (44905)...(44905)
OTHER INFORMATION: n equals
                                                                                                                                                                                                   NAME/KEY: misc feature
LOCATION: (44416)..(44416)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature LOCATION: (36636)..(36636) OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature
LOCATION: (36551)..(36551)
OTHER INFORMATION: n equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature
LOCATION: (36543)...(36543)
OTHER INFORMATION: n equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_feature
LOCATION: (29298)..(29298)
OTHER_INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: misc feature
LOCATION: (10150)..(10150)
OTHER INFORMATION: n equals
FEATURE:
NAME/KEY: misc feature
LOCATION: (45593)...(45593)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                          LOCATION: (40808)..(40810)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature
LOCATION: (40808)..(408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (9921) .. (9921)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (9921)..(992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: (4747) .. (4747)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: (4747)..(474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Haemophilus influenzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                              PEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENGTH: 1830121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
   a,t,c,
                                                                                                                                                                                                          b
                                                                                                                                                                                                                                                                            a,t,c,
                                                                                                                                                                                                                                                                                                                                             a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                a,t,c,
                                                                                                                                       ,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ,t,c,
                                                                    , t, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç
   9
                                                                      ç
                                                                                                                                       유
                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                  မ္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,앉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          မ္
                                                                    ω
                                                                                                                                       ω
                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
```

ė

```
NAME/KEY: misc_feature
LOCATION: (65309). (65309)
OTHER INFORMATION: n equals a,
PEATURE:
NAME/KEY: misc_feature
LOCATION: (65313). (65313)
OTHER INFORMATION: n equals a,
                                                                                                                                                            PEATURE:
NAME/KEY: misc feature
LOCATION: (120038)..(120038)
OTHER INFORMATION: n equals
                                                PEATURE:
NAME/KEY: misc feature
LOCATION: (119724)..(119924)
OTHER INFORMATION: n equals
PEATURE:
                                                                                                                NAME/KEY: misc feature
LOCATION: (119750)..(119750)
OTHER INFORMATION: n equals a,t,c,
                                                                                                                                                                                                                              FEATURE:
NAME/KEY: misc_feature
LOCATION: (107248)..(107248)
OTHER INFORMATION: n equals a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY: misc_feature
LOCATION: (100091)..(100091)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (80024) ..(80024)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (47036)..(47036)
OTHER INFORMATION: n equals
                                                                                                                                                                           NAME/KEY: misc_feature
LOCATION: (117136)..(117136)
OTHER INFORMATION: n equals a,t,c,
                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc_feature
LOCATION: (102696)..(102696)
OTHER_INFORMATION: n equals a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature
LOCATION: (55369)..(55369)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KBY: misc feature
LOCATION: (51805)...(51805)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature
LOCATION: (51786)..(51786)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature
LOCATION: (51602)...(51602)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature
LOCATION: (51334)..(51334)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
NAME/KEY: misc_feature
LOCATION: (45732)..(45732)
OTHER INFORMATION: n equals a,t,c,
                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                             OTHER INFORMATION: n equals a,t,c,
                                                                                                                                                                                                                                                                                                           NAME/KEY: misc feature
LOCATION: (105121)..(105121)
                                                            a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a,t,
                                                                                                                                                                                                                                                                                                                                                                                                               a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ø
      a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , t, c,
                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
       ö
                                                             õ
                                                                                                                     유
                                                                                                                                                                              유
                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                               H
                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  မ္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유
                                                            Q
                                                                                                                     ω
                                                                                                                                                                              ω
                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ú
```

```
á
                                        묽
                                                                                                片
                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                        FEATURE:

NAME/KEY: misc_feature
LOCATION: (145942). (145942)
COTHER INFORMATION: n equals a,t
FEATURE:
NAME/KEY: misc_feature
LOCATION: (147197). (147197)
TOCATION: (147107). n equals a,
                                                                                                                                                       Matches
                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:

NAME/KEY: misc feature

122336)..(122336)

122336)... n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PEATURE: misc feature NAME/KEY: misc feature (122167)..(122167)
                                                                                                                                                                                                             NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                               NAME/KEY: misc_feature
LOCATION: (152500)..(152500)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                           NAME/KEY: misc feature
LOCATION: (150841)..(150841)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FRATURE:
NAME/KEY: misc_feature
LOCATION: (145171)..(145171)
OTHER INFORMATION: n equals a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc feature
LOCATION: (145058)..(145058)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature
LOCATION: (142750)..(142750)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (140398)..(140398)
OTHER INFORMATION: n equals a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (139910)..(139910)
OTHER INFORMATION: n equals a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc feature
LOCATION: (131360)..(131360)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc feature
LOCATION: (131340)..(131340)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (122336)..(122336)
OTHER INFORMATION: n equals a,t,c,
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature
LOCATION: (121344)..(121344)
OTHER_INFORMATION: n equals a,t,c,
                                                                                                                                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                           802792
                                                                                                 802735
100
                                                                                                                            40
                                                                                                                                                                     Similarity
                                                                                                                                                                                                           misc_feature
(152530)..(152530)
                                          TATAAAGCTGGACAATTAAGTATTGATACTTTAATTGAAGCTGTACCAGAAATGAAAAAT
                                                           TACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGAC
                                                                                                ATCTTGGCAACGGGTACCATTGCAGGAAGCGGGCAAAGTTCGGTAAA---TTCTGCG
                                                                                                                            ATCCTGGCCACCGGCGCACCATCGCCGGCGCCTGGCGCCAGCGGCCAACAGCGCCACC
                                                                                                                                                       Conservative
                                                                                                                                                                  13.6%;
                                                                                                                                                                                                                                                                                                                                                                     a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a,t,
                                                                                                                                                                                                                                                        a,t,c,
                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                           a,t,c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a,t,c,
                                                                                                                                                      0;
                                                                                                                                                     Score 138; DB 18;
Pred. No. 2.7e-26;
D; Mismatches 491;
                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                             မ္
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         o
R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              မှု
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                  ю
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ιΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ю
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ιо
                                                                                                                                                                                Length 1830121;
                                                                                                                                                       Indels
```

12;

Gaps

ω

99 802791

```
RESULT 7
US-10-425-115-43132
; Sequence 43132, Application US/10425115
; Publication No. US20040214272A1
; GENERAL INFORMATION:
APPLICANT: LA ROSA, Thomas J.
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules a
TITLE OF INVENTION: Plants
FILE REFERENCE: 38-21[5322]B
CURRENT APPLICATION NUMBER: US/10/425,115
CURRENT FILING DATE: 2003-04-28
                                                                                                                                                                                                                                                                                                                                   र्
                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             803386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    803326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             803266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    803206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           803146
                                                                                                                                                                                                                                                                                                       803686
                                                                                                                                                                                                                                                                                                                                                                              803626
                                                                                                                                                                                                                                                                                                                                                                                                                                                      803566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               803506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    803086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          803026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        802912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    280
                                                                                                                                                                                                                                                                                                                                         997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATAGCGTCGTTGTAGTCCGTTCTTCTCGTGTACCAACGGGTTATACAACTCGTGACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATAACAGCAAAGTGGACTATGAACGTTCCCCAGAAAGCAAACATACCATCAACACTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCAGTACGACCGCAGTGCAAACGTTCCATTCACCAAATTATGGTTCTCTAGGCTATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCTGGCTAAAACTGGCAAAAGCCATCAATGCTCAATGTAAAAGTACT-----GATGGA 802965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCGAAGACTTCTAAGA
                                                                                                                                                                                                                                                                                                                                                                              CGCGTGCTCTTGCAATTAGCTTAACTCAAACTAAAGATCCNAAAGTAATTCAACAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGTTGATGATAGTAAATÁTGGCTTTGTAGCATCAGGTACTTTAAATCCACÁGAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACGGCGTGCAGATCATTCGTTCGTCACGTCAACAGGGCGGTTTCGTGCTGCGTAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAGTTGGCAATGGAAATGTTAATGCTGCACACTTAGATCGCTTAGAAAAAGCCCGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCCCTGCAGGAGCTGCGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCACCTGTCGAACCATTAAACGCATTACTCAATGCTGGCTATCAAGGGATTGTATCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GICACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTCGTGGTGTTTTAGTCGCAATGAATAATGAAGTACTAGGTGCTCGCGATGTAACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGATGGCCCATTAAATCTTTACAATGCTGTCGTTGTCGCAGCAGACAAAAATCAAGT 803145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAAAATGTGAAAAACCGGTTGTTCTCGTTGGGGCAATGCGTCCTGCAACAGAAAAAAGT 803085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCGGCACCGCCATGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCGTCATCACCCATGGCACCGGACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGC 279
                                                                                                                                                                                                                                                                                                                                         TTCTGGGAATACTGATA 1013
                                                                                                                                                                                                                                                                                                                                                                                                                  CGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGCAAGGAGCTGCAGCGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGACCTGAACCCCGCAGAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACAGCTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGATCAACATCAAGACCGAAGCCTTCAAGAGCGC---CTGGGGCCCGCTGGGCATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTGTCATTACCCATGGTACAGATACCATGGAAGAGACGGCTTATTTCTTAGATTTAACC
                                                                                                                                                                                                                                                                                                       803702
                                                                            Molecules
                                                                              and Other Molecules Associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      459
                                                                                                                                                                                                                                                                                                                                                                                803685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               803565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           803205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      339
                                                                                                                                                                                                                                                                                                                                                                                                                  996
                                                                                                                                                                                                                                                                                                                                                                                                                                                      803625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             803445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    803385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             803325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    803265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   803025
                                                                                With
```

```
ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 8
US-10-029-386-22613/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; OTHER INFORMATION: US-10-425-115-43132
                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/10/029,386
CURRENT FILING DATE: 2001-12-20
NUMBER OF SEQ ID NOS: 34288
SOPTWARE: Annomax Sequence Listing Engine vers.
SEQ ID NO 22613
LENGTH: 990
                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 22613, Application US/10029386
Publication No. US20030194704A1
GENERAL INFORMATION:
APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID
SEQ ID NO 43132
LENGTH: 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                     APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K.
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL
TITLE OF INVENTION: EXPRESSION ANALYSIS TWO
FILE REFERENCE: ABOMICA-X-2
ORGANISM: Homo sapiens
PEATURE:

OTHER INFORMATION: MAP TO ACO08103.27

OTHER INFORMATION: EXPRESSED IN HELA, SIGNAL = 0.87

OTHER INFORMATION: EXPRESSED IN PLACENTA, SIGNAL = 1.4

OTHER INFORMATION: EXPRESSED IN BRAIN, SIGNAL = 1.2

OTHER INFORMATION: EXPRESSED IN BONE MARROW, SIGNAL = 1.2

OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 1.2

OTHER INFORMATION: SWISSPROT HIT: P28481, EVALUE 7.00e-12
                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Zea mays FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match 8.8%;
Local Similarity 53.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        317 CCGCCTACTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               228;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ရှိ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTAATGGATCCGCAATCGGTCAACCGCGACGCGATGGTGTAGACGAACTACACCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTTTGCCCCGCTCGGGTATATCCACAACGCTAAGGGCAATTACCAGTGCTCACCGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGCCAGCAACAAGGACTCGCGCGCGAAGGGCGTGCTGGTGACCATGAACGACGAGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ဓ္ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCATTGTCTACAACTATGACAACGACTCCGATGCCCCGACCAAGGTGCTGATCGACGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCCTGGCACAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAAGCATACCCGTGÁTACTACAACTCGÁCGTCÁGCAÁGCTGÁACGAACTGCCGAÁGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccreeecccecreecarecreeredaaeccaaerccracreerrcceccrecce-ecc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGATGGGCGTGACGACCAAGACCAATACTAATGCCGCGCAGACCTTCCATACGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTC---AAGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCTACCGGCGACTGCGATGAGCGCCGATGCTACGGTCAACCTGTATAATGACGGGGAGA 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGCCTACTTTCTCGATCTGACGGCGAAGTGCGACAAGCCTCTGCCGCTGGTGGGGGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Clone ID: MRT4577_139344C.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               369326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches 191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 89.4; DB 18;
Pred. No. 7.9e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     437;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    362
```

FOR GE

```
RESULT 9
US-10-411-910A-221
# Sequence 221, Application US/10411910A
# Publication No. US20040209256A1
# Publication No. US20040209256A1
# APPLICANT: Dillon, Harrison F.
# APPLICANT: Dillon, Harrison F.
# TITLE OF INVENTION: Methods and Compositions for CURRENT APPLICATION NUMBER: US/10/411,910A
## CURRENT APPLICATION NUMBER: US/10/411,910A
## CURRENT FILING DATE: 2003-04-12
## NUMBER OF SEG ID NOS: 343
## SOFTWARE: PatentIn version 3.2
                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ई
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHER INFORMATION:
; OTHER INFORMATION:
US-10-029-386-22613
                                                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                            र्
                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                    र्
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   श्च
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
nes 364, Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          582
                                                                                                                                                                                                                                                                                                    659
                                                                                                                                                                                                                                                                                                                                 342
                                                                                                                                                                                                                                                                                                                                                             599
                                                                                                                                                                                                                                                                                                                                                                                            402
                                                                                                                                                                                                                                                                                                                                                                                                                                                       462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5 AAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGCACCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGG
                                                                                                                                                                                                                                                                        AGGAGGATGCCGCCCAGGGCATCGCCAACGAGGACGCCGCCCAGGGCATCGCCAACGAGG
                                                                                                                                                                                                                                                                                                   GCCTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGCCTACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                       AAGCCTTCAAGAGCGCCTGGGCCCGCTGGGCATGGTGGTAGGCAAGTCGTACTGGT 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGCGAGGACGCCGTCCAGGGCATCGCCAAGGAGGACGCCGCCCAGGGCATCGCCAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---ĠĊAŤĊĠĊĊĄĀĠĠĀĠĠĠĊĠĊĊĠĊĊĊĀĠĠĠĊĄŤĊĠĊĊĀAĠĠĀĠĠĀĊĠĊĊĠĊĊĊĀĊĠĠĊĄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGCGTGGCCGAGCTGGCCAACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCATCGCCAGGGAGGACGCCCCAGGGCATCGCCAAGGACGCCGCCCAGG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCACGGCATCGCCAGCGAGGACGCCGCCCCAGGGCATCGCCAGCGAGGACGCCGCCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGCCGCCCACGGCATCGCCAGCGAGGACGCCGCCCCACGGAATCGCCAGCGAGGACGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGCCGCCCAGGGCATCGCCAAAGAGGACGCCGCCCACGGCATCGCCAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGACGCCGCCCAGGGCATCGCCAAGGAGGACGCCCCCAGGGCATCGCCAAGGAGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTACAACGCCGTGGCCGGCAGCAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rcercereercearececcececacecarerceaceaceaceacearecreaace
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCGCCAAC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAT-----GCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGAGGATACTGTACACGACATCGCTAACGAGGCCGCCGACAAGGGCATCGCCAACGAGG
                                                                                                                                                                                                                                         CCCTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCACCGGCAATG
                                                                                                                                                                                                                                                                                                                                 TCGCCAGCGAGGACGCCGCCCACGGCATCGCCAGCGAGGACGCCGTCCAGGGCATCGCCA
                                                                                                                                                                                                                                                                                                                                                            TCCGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGCCCAGGGCATCGCCAACGAGGGCGCCGCCCAGGGCATCGCCAAAGAGAGGACGCCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST HUMAN HIT: AL110383.1, EVALUE 0.00e+00 NT HIT: gi14756466, EVALUE 0.00e+00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8.1%;
47.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGGACTCCGCCCACGGAATCGCCAGCGAGGACGCCGCCCACGGCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 82.6; DB 16; Length Pred. No. 5.6e-12; o; Mismatches 389; Indels
                                                                           for
                                                                          Evolving Hydrogenase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                          Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              640
                                                                                                                                                                                                                                                                                                                                                             658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    871
                                                                                                                                                                                                                                                                                                    718
                                                                                                                                                                                                                                                                                                                                                                                                                                                       403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                        223
                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                          닭
                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                   유 &
                                                                                                                                                                                                                                                                                                                       S
 GENERAL INFORMATION:
APPLICANT: Penn, Sharron G.
APPLICANT: Penn, Sharron G.
APPLICANT: Hank, David R.
APPLICANT: Hanzel, David K.
TITLE OF INVENTION: HUMAN GENOME-DERIVED
TITLE OF INVENTION: EXPRESSION ANALYSIS
                                                                                        Sequence 20582, Application US/10029386 Publication No. US20030194704A1
```

```
RESULT 10
US-10-029-386-20582/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: DNA
; ORGANISM: Chlamydomonas reinhardtii
US-10-411-910A-221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 7.7%;
Best Local Similarity 46.3%;
Matches 339; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                               820
                                                                                                                                                                                                       694
                                                                                                                                                                                                                                                                                                                                                                   574
                                                                                                                                                                                                                                                                                                                                                                                                           640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  160
                                                                                    980
                                                                                                                                                                                                                                             760
                                                                                                                                                                                                                                                                                                                                                                                                                                                   520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCCGCGCAGCACCATCCGCGTGGCCGCCACCGCCACCGACGCCGTGCCCCACTGGAAG
                                                                                                                       GCCGGCACCGGC 765
                                                                                                                                                                                                     AACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGCTGATCCAT
                                                                                                                                                                                                                                                                                                                                                           GTGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCAACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCCCTGGAGGAGCTGGACAAGCCCAAGGACGGCGGCCGCAAGGTGCTGATCGCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGGAGCTG-----GCCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCACCGGCACCATCGCCGGCGCTGGCGCCAGCGGCGAACAGCGCCACCTACCAG
                                                                                                                                                               CCCGACAGCGACTGGGACCAGCCCCTGGGCCTGGGCAGCGGCGCGCGTGCTGTTCGGC
                                                                                                                                                                                                                                             ATCACCACCGCCGAGCTGGGCAACATCTTCAAGGAGCGCGGCATCAACCTGCCCGAGCTG
                                                                                                                                                                                                                                                                                   GAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACAGCTATGGC
                                                                                                                                                                                                                                                                                                                             GAGGCCGACCGCGAGTGGTTCTGCGTGAGCGAGCCCGGCGTGCGCGACGTGGACCACGTG
                                                                                                                                                                                                                                                                                                                                                                                                           TCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCAAGGGCGTGCTGGTGACCATGAACGACGAGGATCCAGTCCGGGCGTGACGTGAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCGGCTGGGTGGCCATGATGGAGAAGAGCTACCCCGAGCTGATCCCCTTCGTGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCACCTGGAGGCCCACCCCCACAGCGACGACGCCCCTGCCCCATGTTCACCAGCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAAGACCGACAAGCCGATCGTCGTCGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTTCGCCGCCGACCTGACCATCATGGAGGAGGGCACCGAGCTGCTGCACCGCCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCGTCATCACCCATGGCACCGGCACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCCCCGGCAAGCTGGCCACCGGCCTGCGCCCTGGGCTTCGACCAGGTGTTCGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGGCCCCCGCGTGCGCGTGGCCATCGCCGAGAGCTTCGGCCTGGCCCCCGGCGCGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGAC
                                                                                    891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 78.4; DB 18;
Pred. No. 7.6e-11;
0; Mismatches 381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          159
                                                                                                                                                                                                                                               819
                                                                                                                                                                                                                                                                                       693
                                                                                                                                                                                                                                                                                                                           759
                                                                                                                                                                                                                                                                                                                                                                     633
                                                                                                                                                                                                                                                                                                                                                                                                             699
                                                                                                                                                                                                                                                                                                                                                                                                                                                     573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       339
```

SINGLE EXON

NUCLBIC

ACID

PROBES

USBFUL

FOR ള

```
8
                                                                                                                             밁
                                                                                                                                                                  ঠ
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-029-386-20582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/10/029,386
CURRENT FILING DATE: 2001-12-20
NUMBER OF SEQ ID NOS: 34288
SOFTWARE: Annomax Sequence Listing Engine vers.
SEQ ID NO 20582
LENGTH: 926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILE REFERENCE: AEOMICA-X-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER
OTHER
OTHER
OTHER
OTHER
OTHER
OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEATURE:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ocal Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R INFORMATION:
R INFORMATION:
R INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION: INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION:
                                          329
                                                                                  629
                                                                                                                               389
                                                                                                                                                                       569
                                                                                                                                                                                                                 449
                                                                                                                                                                                                                                                                                                                                            449
                                                                                                                                                                                                                                                                                                                                                                                       569
                                                                                                                                                                                                                                                                                                                                                                                                                                 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   803 CCGCCCACGGCATCGCCAACGAGGACGCCCGCCCACG-----GCATCGCCAGCGAGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29 CCAACGTGGTGATCCTGGCCACCGGCGCACCATCGCCGGCGCTGGCGCCAGCGCGCCA 88
                                                                                                                                                                                                                                                          ACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCTGGGGCCCGCTGG 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGCCCACGGAATCGCCAGCGAGGACGCCCCACGGCATCGCCAGCGAGGACGCCGCCC 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGG 148
                                                                                                                                                                       GCATGGTGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGCCACACGGTCA 628
                                                                                                                                                                                                                                                                                                                                                                                         AGGAGGACGCCGAGGGCATCGCCAACGAGGACGCCGCCCAGGGCATCGCCAAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCAACA 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCA 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCATGAGGACACCGTACACGACATCACTAACGAGGACGCCACACACGACATCGCTAACG
ATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCCAAGGCGCTGA
                                                                                    ACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATCGCCTACAGCT 688
                                                                                                                               GCATCGCCAACGAGGACGCCGCCCACGGAATCGCCAGCGAGGACGCCGCCCACGGCATCG
                                                                                                                                                                                                                 CCCAGGGCATCGCCAAAGAGACGCCGCCCATGGCATCGCCAACGAGGACGCCGCCCAGG
                                                                                                                                                                                                                                                                                                                                            AGGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGCGTG 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCCGGCA 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGGCATCGCCAACGAGGACGCCGCCCAGGGCATCGCCAAGGAGGACGCCGTCCACGGCA 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTACTTTT 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGATACTGTACACGACATCGCTAACGAGGCCGCCGACAAGGGCATCGCCAACGAGGACG
                                          CCAGCGAGGACGCCGTCCAGGGCCATCGCCAAGGATGCCGCCCAGGGCATCGCCAACG
                                                                                                                                                                                                                                                                                                      ACGCCGCCCAGGGCATCGCCAAGGAGGACGCCGCCCAGGGCATCGCCAACGAGGGCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGCCAACGAGGACGCCGCCCAGGGCATCGCCAACGAGGACGCCGCCCAGGGCATCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EXPRESSED
EXPRESSED
EXPRESSED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EXPRESSED IN BRAIN, SIGNAL = 1.8
EXPRESSED IN HEART, SIGNAL = 2.3
EXPRESSED IN BONE MARROW, SIGNAL = 2.2
EST HIMAN HIT: ALI10383.1, EVALUE 0.00e+00
NT HIT: 9114756466, EVALUE 0.00e+00
SWISSPROT HIT: P28481, EVALUE 1.00e-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MAP TO AP000552.1
EXPRESSED IN LUNG
EXPRESSED IN FETA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D IN LUNG, SIGNAL = 1.8
D IN FETAL LIVER, SIGNAL = 1
D IN ADULT LIVER, SIGNAL = 2
D IN PLACENTA, SIGNAL = 1.7
D IN HELA, SIGNAL = 1.9
D IN HELA, SIGNAL = 1.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 75.8; DB 16; Length 9
Pred. No. 3.5e-10;
0; Mismatches 402; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                               330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        750
                                          270
                                                                                                                                                                                                                                                                                                      450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        804
```

```
RESULT 11
US-10-282-122A-14804
밁
                               Ş
                                                                       밁
                                                                                                        8
                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                        US-10-282-122A-14804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR PELLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR PILING DATE: 2000-09-06
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/242,578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 14804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 14804, Application US/10282122A
Publication No. US20040029129A1
                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                               Remaining Prior Application data removed - NUMBER OF SEQ ID NOS: 78614 SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlo
APPLICANT: Malone, Chery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Bordetella
                                                                                                                                                                                                                                                                                                                                                                                                                                                        OR FILING DATE: 2000-11-27
OR APPLICATION NUMBER: 60/257,931
OR FILING DATE: 2000-12-22
OR APPLICATION NUMBER: 60/267,636
OR FILING DATE: 2001-02-09
OR APPLICATION NUMBER: 60/269,308
OR APPLICATION NUMBER: 60/269,308
OR APPLICATION NUMBER: 60/269,308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 60/253,625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      749
                                                                                                              84
                                                                                                                                                                                                                             306;
                                                                                                                                                                                       INVENTION: Identification of Essential Genes
                                                                                                                                                                                                                                               Similarity
                                   GCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGA 203
                                                                                                              GGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGT 143
                                                                                                                                                  CCGCCCACGCCATCGCCAACG 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCATGCCGGCACCGGCAATG 769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Trawic.,
Carr, Grant
Carr, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGACGCCGCCCAGGGCATCGCCAACGAGGACGCCCCAGGGCATCGCCAAAGAGGACG 210
                                                                         GCACGGCATCGCGCGCTTCGCGCCGGTGGCCTGCGCCGGCTGCTGGAGGCCGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Haselbeck,
Ohlsen, Kai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yamamoto, R
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wall, Daniel
Trawick, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ohlsen, Kari
Zyskind, Judith
                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                               7.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Carlos
                                                                                                                                                                                                                                                                                                                          pertussis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Robert
                                                                                                                                                                                                                             Score 74.6; DB 17;
Pred. No. 7.6e-10;
0; Mismatches 354;
                                                                                                                                                                                                                                                                                                                                                                                                                                        See File Wrapper or PALM.
                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in Microorganisms
   TCGTGGGCGG
                                                                                                                                                                                                                               9;
                                                                                                                                                                                                                               Gaps
                                                                                                                                                      470
   590
                                                                             530
```

```
APPLICANT: CHIRON SpA
APPLICANT: THE INSTITUTE FOR GENOMIC RESEARCH
ITILE OF INVENTION: STREPTOCOCCUS PNEUMONIAE PROTEINS AND NUCLEIC ACIDS
FILE REFERENCE: P026926W0
CURRENT APPLICATION NUMBER: US/10/472,928
CURRENT FILING DATE: 2003-09-26
PRIOR APPLICATION NUMBER: GB-0107658.7
PRIOR FILING DATE: 2001-03-27
NUMBER OF SEQ ID NOS: 4979
SOFTWARE: SeqWin99, version 1.03
SEQ ID NO 4159
LENGTH: 960
TYPE: DNA
ORGANISM: Streptococcus pneumoniae
US-10-472-928-4159
                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
US-10-472-928-4159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                  ঠ
                                                 밁
                                                                                                                  밁
                                                                                                                                           र्श
                                                                                                                                                                                  Query Match
Best Local S
Matches 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4159, Application US/10472928
Publication No. US20050020813A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                    Local Similarity
nes 152; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     204
                    386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     831
                                                                                                                                                   266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     264 CAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCCTGGAAGAAGAAACCGCCTA
GCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAACGGTCCGGTCGGCGTGTTCGAGTTCGACCAGTTCGCCCACGGCACCGAGGTGGTGGC 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCATCACCAACGACGACGTCAAGCTGGCCAAGCAGCGTGGCCGACAGCTGGCCGACAG
                                                     TCCTTGATACCATGGAAGTTCCCCATATGCCTATCGTTCTAACAGGAGCCATGCGTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATCGCCAA 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGGGCCCGCTGGGCATGGTGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAA 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGTCGGTCCGTTCCATGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTGGTCGGCGGCATCGCCAACACCTTCATGCTGGCCGCCGGCCTGCCCCATCGGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCCAAGGTGTCGACCAAGCTGTCCATCCTGCAATCGCTGGCCGACAAGGTCGACCAGCT
                                                                                                                  ĂTAĂĊTĂĊĠĂŤĠĠĀĠŦĠĠŤĠĂŤĊĂĊĂĊĠĊĠĠĀĂĊĊĠĂŦĂĊŦŦŤĀĠĀĠĠĀĀĀĊĀĠĊĊŦĂŦŤ
                                                                                                                                                   ATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATCGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGCGCCATCGCCGACTCGGCGGGCTTTTCGATTGCCGGCGGCGGCGATACGCTGGCGGC 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGCCACACGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGA 674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCCGCGGCCACCGTCAAGGCGGCCGCCGACGTGGCCGACGACGACATGATCCTCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGTGGCCAGCAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGCGGCGCCGAGGTGCCGATTCCCACCGACGTGGTTTGCGCCCAAGTCGTTCGGCGCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGCACCGCC-----ATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGC
                                                                                  7.1%;
ilarity 53.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     683
                                                                                                                                                                                    0
                                                                                                                                                                                Score 72.2; DB 19
Pred. No. 3.2e-09;
0; Mismatches 133
                                                                                                                                                                                                                 DB 19;
                                                                                                                                                                                    Indels
                                                                                                                                                                                                                 Length 960;
                                                                                                                                                                                  0;
                                                                                                                                                                                    Gaps
                    445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      710
                                                   340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      830
                                                                                  385
                                                                                                                    280
                                                                                                                                                   325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       770
```

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TYPE: DNA
; ORGANISM: Streptococcus
US-10-472-928-4979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                   US-10-473-687-3
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
APPLICANT: Shen, Zhicheng
APPLICANT: Shotkoski, Frank
APPLICANT: Warren, Greg
TITLE OF INVENTION: NOVel Pesticidal Toxins
FILE REFERENCE: S-60000PCT
CURRENT APPLICATION NUMBER: US/10/473,687
CURRENT FILING DATE: 2003-09-27
NUMBER OF SEQ ID NOS: 13
SOFTWARE: PatentIn version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-472-928-4979
                                                                                                                                                                                                 Sequence 3, Application US/10473687
Publication No. US20040133942A1
GENERAL INFORMATION:
APPLICANT: Wiles, Paul
APPLICANT: Kramer, Vance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4979, Application US/10472928 Publication No. US20050020813A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: SeqWin99,
SEQ ID NO 4979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 7.1%;
Best Local Similarity 53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 152;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: P026926WO
CURRENT APPLICATION NUMBER: US/10/472,928
CURRENT FILING DATE: 2003-09-26
PRIOR APPLICATION NUMBER: GB-0107658.7
PRIOR PILING DATE: 2001-03-27
NUMBER OF SEQ ID NOS: 4979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: CHIRON SPA
APPLICANT: THE INSTITUTE FOR GENOMIC RESEARCH
TITLE OF INVENTION: STREPTOCOCCUS PNEUMONIAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 2162598
                                                                                                                                                                                                                                                                                                                                                                                                          1794825 AGTATGTCÁCCAAAACACATÁCGÁCTAÁTGTCAGCACCTTCCAGÁ 1794869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1794585 ATAACTACGATGGAGTGGTGATCACACACGGAACCGATACTTTAGAGGAAACAGCCTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      266 ATGACGTCGATGGCCATCATCACCCATGGCACCGACACCCTGGAAGAAGCAGCCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      341 CCAATGAGCTCGGTAGTGATGGTGTTTATAATTACCTAAGTGCTTTACGAGTGGCCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAATGAGCTCGGTAGTGATGGTGTTTATAATTACCTAAGTGCTTTACGAGTGGCCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCA 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTTGATACCATGGAAGTTCCCCATATGCCTATCGTTCTAACAGGAGCCATGCGTAGCT 1794704
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGA 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTATGTCACCAAAACACATACGACTAATGTCAGCACCTTCCAGA 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGA 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGACAGGGCTGCTGACAAAGGAGTTTTTGGTCGTTATGAACGATGAAATCCACGCTGCCA 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGC 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGACAGGGCTGCTGACAAAGGAGTTTTGGTCGTTATGAACGATGAAATCCACGCTGCCA 1794824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGGC 505
                                                                                                                                                       Kramer, Vance
Shen, Zhicheng
Shotkoski, Frank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 72.2; DB 19
Pred. No. 8.1e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 2162598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND NUCLEIC ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1794764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1794644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
RESULT 15
US-10-738-986-15
J Sequence 15, Application US/10738986
Publication No. US20040209241A1
GENERAL INFORMATION:
                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                 음 성
                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                          ર્શ
                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-473-687-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 3
LENGTH: 2364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
APPLICANT: Hermanson, Gary
APPLICANT: Geall, Andrew
APPLICANT: Wloch, Mary Kopke
TITLE OP INVENTION: Codon-Optimized Polynucleotide-Based Vaccines Against
TITLE OP INVENTION: Cytomegalovirus Infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature LOCATION: (1)...(2364)
OTHER INFORMATION: Maize
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1156
                                                                                                                                                                           1576
                                                                                                                                                                                                                                  1516
                                                                                                                                                                                                                                                                                          1456
                                                                                                                                                                                                                                                                                                                                                  1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1036
                                                                                                                                                                                                     667
                                                                                                                                                                                                                                                                                                                                                                             490
                                                                                                                                                                                                                                                                                                                                                                                                                                    430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13 AACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGGCACCATCGCCGGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACTCCCTCTCCGAGATCGTGTACGGCGACATGGACAAGCTCCTCTGCCCGGACCAGTCC 1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGATCATCGTGGAGGCCAAGCCGGGCTACGCCCTCGTGGGCTTCGAGATGTCCAACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCGCCAGCGGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTG
                                                                                                                                                                           AAGCTCATCGTGCCGCCGATCGGCTTCATCTCCAACATCGTGGAGAACGGCAACCTGG 1633
                                                                                                                                                                                                     CAGGTGGACATCGCCTACAGCTATGGCAACGCTCACCGACACGGCCTACAAGGCCCTGG
                                                                                                                                                                                                                                  ACCTGCAAGTCCTACCTCCGCGAGGTGCTCCTCGCCACCGACCTCTCCAACAAGGAGACC 1575
                                                                                                                                                                                                                                                                                          CTCACCCCGATCAACGGCTTCGGCATCGTGGTGGACGAGAACTCCAAGCTCGTGAACCTC 1515
                                                                                                                                                                                                                                                                                                                      AAGAGCGCCTGGGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTCCGCCTG
                                                                                                                                                                                                                                                                                                                                                 ACCCTCTCCGCCTCCACCGACGGCGTGTACATGCCGCCTCGGCATCATCTCCGAGACCTTC
                                                                                                                                                                                                                                                                                                                                                                             GAGATC---CAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGGCCGTGGCCAGCAACAAGGACTCGCGCGCGAAGGGCGTGCTGGTGACCATGAACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCTTCACCAAGAAGATGAACTCCCCTCCGCTACGAGGCCACCGCCAACTTCTACGACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCAAATCTACTACAACCAACAACATCGCCTTCCCGAACGAGTACGTGATCACCAAGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCATCACCGTGCTCAAGGCCTACCAGGCCAAGCTCAAGCAGGACTACCAGGTGGACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCGCCTCCGAAAGCATCACCAACGACCACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCTCCAACACCTTCTCCAACCCGAACTACGCCAAGGCCAAGGGCTCCAACGAGGACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATGAACGAGCACCTCGACAAGGAGAAGGAGGAGTTCCGCGTGAACATCCTCCCGACC
                                                                                                                                                                                                                                                             CCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                          TCCACCGGCGACATCGÁCCTCAÁCAAGACCAAGGTGGAGTCCTCCGAGGCCGAGTACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGCCGACAGCAATGACGTCGATGG---CATCGTCATCACCCATGGCACCGACACCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           optimized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 70; DB 18; 1
Pred. No. 1.4e-08;
0; Mismatches 385;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vip3B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2364;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                        724
                                                                                                                                                                                                                                                               666
                                                                                                                                                                                                                                                                                                                       606
                                                                                                                                                                                                                                                                                                                                                                               546
                                                                                                                                                                                                                                                                                                                                                                                                                                      489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    132
                                                                                                                                                                                                                                                                                                                                                                                                           1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72
                                                                                                                                                                                                                                                                                                                                                    1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      369
                   Human
                                                                   S
                                                                                                     문
                                                                                                                              S
                                                                                                                                                            밁
                                                                                                                                                                                   S
                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                   닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                S
                                              맑
                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
```

```
; OTHER INFORMATION: US-10-738-986-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PILE REFERENCE: 1530.0580001
CURRENT APPLICATION NUMBER: US/10/738,986
CURRENT FILING DATE: 2003-12-19
PRIOR APPLICATION NUMBER: US 60/435,549
PRIOR FILING DATE: 2002-12-23
NUMBER OF SEQ ID NOS: 50
SOFTWARE: Patentin version 3.2
SEQ ID NO 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 2718
TYPE: DNA
ORGANISM: Artificial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                           2253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1836 GCCCAGCCTGAAGATCTTCATCGCCGGCAACAGCGCCTACGAGTACGTGGACTACCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1776 CCAGCTGGGCGAGGACAACGAGATCCTGCTGGGCAACCACAGGACCGAGGAGTGCCAGCT 1835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCCAGCGCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGAT 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGAT 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACGACCTGATGÁGCGGCCTGGGCGCCGCCGGCAAGGCCGTGGGCGTGGCCATCGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGGCGCACCATCGCCGGCGCTGG
                                                                                                                                                          CATCGCCTACAGCTATGGCAACGTCACCGACACGCCTACAAGGCCCCTGGCACAGAACGG
                                                                                                                                                                                                            CGCCGACGGCACCACCGTGACCAGCGGCAGCAGCAAGGACACCAGCCTGC-----AGGC
                                                                                                                                                                                                                                                             GCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGA 674
                                                                                                                                                                                                                                                                                                                     CACCAGGCAGAGGAGGCTGTGCACCCAGCCCCTGCAGAACCTGTTCCCCTACCTGGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTGGGCGCGCGTGGCCAGCGTGGTGGAGGGCGTGGCCACCTTCCTGAAGAACCCCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATGCGCCCGGCACGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGGGTGAAGTACGTGGAGGACAAGGTGGTGGACCCCCTGCCCCCTACCTGAAGGGCCT 2132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACCGCCTACTTTTTGAACCTCGTGGAAAAAGACCGACAAGCCGATCGTCGTCGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGGAGCAACGTGTTCGACCTGGAGGAGATCATGAGGGAGTTCAACAGCTACAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCCGACACCCCTGGAAGA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGACCCCTGGAGAACACCGACTTCAGGGTGCTGGAGCTGTA---CAGCCAGAAGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGAGGATGATCGACCTGAGCACCAGCACCGTGGACAGCATGATCGCCCTGGACAT
CAGCGACGCCAGCACCGCCGCCCCCCTACACCAACGAGCCAGGCCTACCAGATGCTGCT
                                              CGCCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCC 794
                                                                                                        ĊCCCCCAGCTACGAGGAGAGCGTGTACAACAGCGGCAGGAAGGGCCCCGGCCCCCCAG
                                                                                                                                                                                                                                                                                                                                                                   CTGGGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAA 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTGGCCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGAT 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon-optimized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 70; DB 18; Length 2:
Pred. No. 1.4e-08;
0; Mismatches 430; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
F
C
M
C
M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 2718;
                                                                                                        2486
                                                                                                                                                          734
                                                                                                                                                                                                              2426
                                                                                                                                                                                                                                                                                                                       2372
                                                                                                                                                                                                                                                                                                                                                                                                                             2312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
```

AGCCCTGCAGGAGCTG 810

2547 GGCCCTGGCCAGGCTG 2562

밁

Search completed: March 22, 2005, 13:09:36 Job time: 713 secs

Ihis Page Blank (uspto)

Wed Mar

23 08:59:37 2005

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                        Regult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM nucleic - nucleic search, using sw model
                                                                                         0000000000000
                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                              ĕ
                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                              Score
                                     84
82
73.6
73.6
72.6
72.6
70.6
70.6
8.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   March 22, 2005, 06:19:23 ; Search time 3914 Seconds (without alignments) 9861.310 Million cell updates/sec
                                                                                                                                                                                                                                                                                                              Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34239544 seqs, 19032134700 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 aaggaagtggagaaccagca.....ttttctgggaatactgataa 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-842-628-1
1014
                                                                                                              GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                      gb_est1: *
gb_est2: *
gb_htc: *
gb_est3: *
gb_est4: *
gb_est6: *
gb_gs1: *
                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                              BB
 BZ568327
BZ570599
BZ571432
BZ571432
BZ571432
BZ571326
AQ1571050
BH3776509
BH3771112
CH3776509
BH3771112
CH3776500
BH3771112
CH3776500
AQ500605
AQ5001723
AQ501723
AQ501723
AQ501723
AQ501723
AQ501723
AQ501723
AQ501723
CV516872
                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68479088
BZ568327 pacs2-164
BZ571362 msh2 1851
BZ570559 msh2 1466
BZ571432 msh2 1883
BZ571326 msh2 1883
BZ571326 msh2 1835
BZ571326 msh2 1835
BZ571326 msh2 1835
BZ571326 msh2 1837
BZ571326 msh2 1837
BZ571326 msh2 1837
BZ571326 msh2 137
CL694348 PRIO164a-
AQ590947 RfC01794
AQ500605 V36C6 mTn
AQ500605 V36C6 mTn
AQ500722 V15G1 mTn
AQ501723 V15G2 mTn
AQ501723 V15G2 mTn
AQ503225 V15G5 mTn
BH770857 LLMGCag59
AQ501032 V28H11 mTn
CV516695 0048P0017
CV516695 0048P0017
CV516696 0048P0017
CV516696 0048P0017
BJ720081 BJ720081
                                                                                                                                                                                                                                                                                                     Description
```

## ALIGNMENTS

ð -	ъ	ş	Query Match Best Local : Matches 50	ORIGIN						8001	CONUMA							COMMENT	JOURNAL		TITLE	AULION AULION	A DE LE RENCE			ORGANISM	SOURCE	KEYWORDS	VERSION	ACCESSION	000000000000000000000000000000000000000	POCUS	BZ568327/c	RESULT 1
60 CATCGCCGGCGCTGGCGCCAGCGCCCAACAGCGCCACCTACCAGGCTGCCAAGGTTGG 119	695 ANGAAGTCGGCACGACAAGAAACTGTCCAACGTGGTCATCCTGGCCACCGGNCGGCAC 636	1 AAGGAAGTGGAGAACCAGCAGAAGCTGGCCAACGTGGTGATCCTGGCCACCGG-CGGCAC 59	Match 41.8%; Score 423.6; DB 8; Length 983; Local Similarity 81.8%; Pred. No. 8.2e-80; Les 500; Conservative 0; Mismatches 110; Indels 1; Gaps 1;		/crone_rclinical isolate 2-164 Whole genomic shotgun	/clone="pacs2-164_7476"	/db_xref="taxon:287"	/strain="2-164"	/mol_type="genomic DNA"	/organisma: "Depudomonas		Class: snorgun.	Pax: 2066857244	Tel: 2062216954	Box 352145, Seattle, WA 98105-2145, USA	University of Washington	Genome Center	0 0		Psedomonas aeruginosa library	Whole-Genome-Sequence variation among multiple isolates of	Spenter, J. I. Kaull, R. and Olsen, M.V.	Control of the second of the s	Pseudomonadaceae; Pseudomonas.	Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;		Pseudomonas aeruginosa	GSS.	BZ568327.1 GI:27201144		pace2-164 7476, genomic survey sequence.	200834/ Caree Care	110000 To 11000 To 110000	

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
BZ571362
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            $
                                                                                            PEATURES
                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                             AUTHORS
                                                                            gource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            95
                                                                                                                                     Genome Center University of Washington Box 352145, Seattle, WA 98105-2145, Tel: 2062216954 Pax: 2066857244
                                                                                                                                                                                                                Whole-Genome-Sequence variation Psedomonas aeruginosa library J. Bacteriol. (2002) In press Contact: Chris K. Raymond
                                                                                                                                                                                                                                                                                                                                     Pseudomonas aeruginosa
Pseudomonas aeruginosa
Bacteria; Proteobacteria; Gammaproteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                   genomic survey sequence.
BZ571362
                                                                                                                                                                                                                                                                           Spencer, D.H., Raymond, C.K., Smith, E.E., Sims, E.E., Hastings, M., Burns, J.L., Kaul, R. and Olsen, M.V.
                                                                                                                                                                                                                                                                                                                                                                                      SSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                 msh2_1851.x1 msh Pseudomonas
                                                                                                                       Email: craymond@u.washington.
                                                                                                                                                                                                                                                                                                                                                                                                    BZ571362.1 GI:27206423
                                                                                                                                                                                                                                                                                                                           Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATGAACGACGAGGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTACAACGCCGTGGCGGTGGCCGGCGACAAGTCGGCACGCGGCAAGGGCGTGCTGATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACCGTCGCCAAGCTGGCCGATAGCGACGACGTCGACGGCATCGTGATCACCCACGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCCATGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ccecciecce e10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCCTTCAAGAGCGCCTGGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATGAACGACGAGATCCTCTCCGGCCGCGACGCGAGCAAGATGGTCAACATCAAGACCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTGGTGGTCGGCTCGATGCGCCGGGCACCGCCATGTCCGCCGACGGCATGCTCAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGACACCCTGGAAGAGACCGCCTACTTCCTGACCCTGGTCGAGCACACCGAGAAGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGGTGTTCCAGATCGCCTCGGAAAGCTTCACCAACGAGAACCTGCTGGAACTGGGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTCGACCAGTTGCTGGCCAGCGTACCGCAGCTCAAGGACATCGCCAACGTCCGCGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGCGCACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCGTTCAAGAGCCCGTGGGGCCCGCTGGGCATGGTGGTCGAGGGCAAGAGCTACTGGTT
                                                                                                                                                                                                                                                                                                        (bases 1 to 871)
                                                                                                          shotgun.
              /organism="Pseudomonas (
/mol_type="genomic DNA"
/strain="MSH"
/db_xref="taxon:287"
                                                                              L. .871
                                                                                         ocation/Qualifiers
'db_xref="taxon:287"
'clone="msh2_1851"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            85
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                               aeruginosa genomic clone msh2_1851,
                                                          aeruginosa"
                                                                                                                                                                                                                                                             among
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                     USA
                                                                                                                                                                                                                                                               multiple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                isolates
                                                                                                                                                                                                                                                                                                                                           Pseudomonadales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSS 17-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              299
                                                                                                                                       KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                     ACCESSION
VERSION
                                                                                                                                                                                                                                                RESULT 3
BZ570599/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                             닭
                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                            REFERENCE
    COMMENT
                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                 JOURNAL
                                               TITLE
                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            377
                                                                                                                                                                                                                                                                                                                                                                                                                   913
                                                                                                                                                                                                                                                                                                                           631
                                                                                                                                                                                                                                                                                                                                                        973
                                                                                                                                                                                                                                                                                                                                                                                      571
                                                                                                                                                                                                                                                                                                                                                                                                                                                 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34
            Spencer, D.H., Raymond, C.K., Smith, B.E., Sims, B.E., Burns, J.L., Kaul, R. and Olsen, M.V. Whole-Genome-Sequence variation among multiple isol Psedomonas aeruginosa library J. Bacteriol. (2002) In press
                                                                                                                                                                                                    BZ570599 768
msh2_1446.y2 msh Pseudomonas
genomic survey sequence.
BZ570599
   Contact:
                                                                                                                  Pseudomonas aeruginosa
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
                                                                                                                                                                        GSS.
                                                                                                                                                                                     BZ570599.1 GI:27205660
                                                                                                         Pseudomonadaceae; Pseudomonas.
                                                                                                                                                       Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                             GACAGCAAGGAGCTGCAGCGCATTTTCTGGGA 1004
                                                                                                                                                                                                                                                                                                                                                                                                         CACGACCTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCGGTTTCGTCCTGCGCAACGCCGAGCAGCCGGACAAGAACGACTGGATCGTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCGGTTTCGTGCTGAACGCCGAGCAGCCGACGACAAGAACGACTGGGTCGTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTGTAGGAACTGCGCAAGCAGGGCGTGCAGATTATTCCGGTCCTCGCACGTCAATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCGCCTACAGCTACGGTAACGTCAGCGACACCGCCTACAAGGCCCTGGCCCAGGCCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCACACGGTGAACTCCGAGTTCGACATCAAGCAGATCTTCGCGCTGGCTCCGGTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTCCGGCCGCGACGCGAGCAAGATGGTCAACATCAAGACCGAAGCGTGCAAGAGCCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCAGCCCGATAAGTCGGCACGCGGCAAGGGCGTGCTGATCACCATGAACGACGAGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGCCAGCAACAAGGACTCGCGCGGCGAAGGGCGTGCTGGTGACCATGAACGACGAGGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGGTACCGNGCCCCCCCCCCGAGGTCGACGGTATCGATAAGCTTGATATCGAATT---CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCGCCCCGGCACCCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCG
                                                                                                                                                                                                                                                                                                                                                                                      CACGACCTGAACCCGCAGAAGGCGCGCATCCTGTCCGTGGTCGCGATGACCCAGACCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGGCCCGCTGGGCATGGTCGAGGGCAAGAGCTACTGGTTCCGCGCACCGGTGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGC
                                                                                         (bases 1 to 768)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
    Chris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="msh"
/note="Environmental isolate. Whole genomic shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37.9%;
   Raymond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 384.2; DB
Pred. No. 2e-71;
0; Mismatches 13
                                                                                                                                                                                                                                               768 bp
                                                                                                                                                                                                                                  aeruginosa
                                                                                                                                                                                                                                                                                                                             662
                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134;
                                               multiple isolates
                                                                                                                                                                                                                                  genomic
                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                  clone msh2_1446,
                                                                            Hastings, M.,
                                                                                                                                                                                                                                                GSS 17-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

972

630

912 510 852 450

570

390

736

796

330

676

616

210

270

556

496

90 436

2

```
RESULT 4
BZ571432/c
LOCUS
                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEATURES
REFERENCE
                                                                                                                                      DEFINITION
                                                                          CEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 443;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bource
                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                       246
                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                     306
                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       544
                                                                                                                                                                                                                              126
                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                          186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC
            Pseudomonas aeruginosa
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.
                                                                                                     msh2_1883.x1 msh Pseudomonas
genomic survey sequence.
BZ571432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genome Center University of Washington Box 352145, Seattle, WA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tel: 2062216954
Pax: 2066857244
                                                                                          BZ571432.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Class: shotgun.
                                                          Pseudomonas aeruginosa
                                                                                                                                                                                                                                                  CTGGCACAGAACGGCGCCAAGGCGCTGATCCATGCCGGCAACCGGCAATGGCTCGGTGTCG
                                                                                                                                                                                                                                                                                                            CTGCCCCAGGTGGACATCGCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTTCAAGAGCGCCTGGGGCCCTGGGCATGGTGGTGGAAGGCAAGTCGTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                       CGCGCACCGGTGAAGCGGCACACGGTGAACTCCGAGTTCGACATCAAGCAGATCTCCGCG
                                                                                                                                                                                                                                                                                                                                                                                     CGCCTGCCGGCCAAGCGCCACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTTCAAGAGCCCGTGGGGCCCGCTGGGCATGGTCGAGGGCAAGAGCTACTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAACGACGAGATCCTCTCCGGCCGCGACGCGAGCAAGATGGTCAACATCAAGACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GIGGIGGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCGTGGTTCGATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACACCCT-GAAGAGACCGCCCACTTCCTGACCCTGGTCGAGCACACCGGAGAGCCTATC
                                                                                                                                                                                                                              CTGGCCCAGGCCGCCCAAGGCGATCATCCATGCCGGCAGGGGGATCCACTAGTTCTAG
                                                                                                                                                                                                                                                                                            CTGGCTCCGGTGGAAATCGCCTACAGCTACGGCAACGTCAGCGACACCGCCTACAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACAACGCCG-GGCGGTGGCCGGCGACAAGTCGGCACGCGCAAGGGCGTGCTGATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCGTCGCCTAGCTGGCCGATAGCGAAACAGTCGGCGGCATCGTGATCACCCCCGGTACC
(bases 1 to 840)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               craymond@u.washington.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Pseudomonas aeruginosa"
/mol_type="genomic DNA"
/strain="MSH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="msh2_1446"
/clone_lib="msh"
/note="Environmental isolate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGGCTCGATGCGCCCGGGCACCGCNATGTCCGCCGACGGCATGCTCAACCTG
                                                                                          GI:27206493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _xref="taxon:287"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36.0%;
82.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 364.6; DB 8
Pred. No. 2.9e-67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98105-2145,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                 bp DNA linear GSS 17-DEC-2 aeruginosa genomic clone msh2_1883,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Whole
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         genomic shotgun
                                                                                                                                                    GSS 17-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                       187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                            127
                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                     247
                                                                                                                                                                                                                                                                                                                                                                                                                                                  600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
```

```
JOURNAL COMMENT
                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                              RESULT 5
BZ571326/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                          REFERENCE
                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                            107
                                                                                                                                                                                                                                                                                                                                                       330
                                                                                                                                                                                                                                                                                                                                                                                       167
                                                                                                                                                                                                                                                                                                                                                                                                                      270
                                                                                                                                                                                                                                                                                                                                                                                                                                                     227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       236;
                                                                                                                                                                                                 msh2_1835.x1 msh Pseudomonas
genomic survey sequence.
BZ571326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Spencer, D.H., Raymond, C.K., Smith, E.E., Burns, J.L., Kaul, R. and Olsen, M.V. Whole-Genome-Sequence variation among mu Psedomonas aeruginosa library J. Bacteriol. (2002) In press Contact: Chris K. Raymond
           Whole-Genome-Sequence variation Psedomonas aeruginosa library J. Bacteriol. (2002) In press
                                                        1 (bases 1 to 802)
Spencer, D.H., Raymond, C.K., Smith, E.B.,
Burns, J.L., Kaul, R. and Oleen, M.V.
                                                                                                                                                                      GSS.
                                                                                                                                                                                   BZ571326.1
                                                                                                                                                                                                                                              BZ571326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  University of Washington
Box 352145, Seattle, WA 98105-2145,
                                                                                                        Bacteria; Proteobacteria; Gam
Pseudomonadaceae; Pseudomonas
                                                                                                                                       Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tel: 2062216954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genome Center
                                                                                                                                                    Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fax: 2066857244
                                                                                                                                                                                                                                                                                                                            CACCCTGGGGG
                                                                                                                                                                                                                                                                                                                                                       GAACCTCGTGG 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCAT 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCGCCACCTACACCGCCGCCAAGGTGCCGGTCGACCAGTTGCTGGCCAGCGTACCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCGCCACCTACCAGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGGA 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGGCGGGTCGTCTTGTCCCCCCGCGGTGCTATCGCGGCAGCCGGCGCGAGAGCGGCCAG 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACGIGGIGATICCIGGCCACCGGCGGCACCATCGCCGGCGCGCCAGCGCGAGCGCCAA 89
                                                                                                                                                                                                                                                                                                                                                                                       CGTCGACGGCATCGTGATCACCCACGGTACCGACACCCTGGAAGAGAGACCGCCTACTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                    CGTCGATGGCATCGTCATCACCCATGGCACCCGACACCCTGGAAGAAACCGCCTACTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACCAACGAGAACCTGCTGGAACTGGGCAAGACCGTCGCCAAGCTGGCCGATAGCGACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       craymond@u.washington.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:287"

/clone="mah2_1883"

/clone_11b="msh"

/clone_11b="msh"

/note="Environmental isolate. Whole genomic shotgun

library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Pseudomonas
/mol_type="genomic DNA"
/strain="MSH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      j. .840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ocation/Qualifiers
                                                                                                                                                                                    GI:27206387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18.8%;
                                                                                                                                                                                                                                                                                                                             97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 191; DB 8; Le
Pred. No. 2.7e-30;
"" "" omatches 75;
                                                                                                                                                                                                                                                802
                                                                                                                     Gammaproteobacteria;
                                                                                                                                                                                                                                aeruginosa genomic
                                                                                                                                                                                                                                              ď
                                             among
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          aeruginosa<sup>*</sup>
                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                multiple isolates
                                              multiple
                                                                          Sims, B.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sims, E.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 840;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                              linear
                                                                                                                          Pseudomonadales;
                                                                                                                                                                                                                                 clone
                                                                          Hastings, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hastings,
                                                                                                                                                                                                                                                GSS 17-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                              msh2_1835,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                     168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   269
                                                                                                                                                                                                                                                                                                                                                                                         108
                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
FEATURES
                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 6
AQ157105
LOCUS
                                                                                                                                                                                                   JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                       A BAC End Sequencing Framework to Sequence the Unpublished (1998)
Contact: Wing RA
Clemson University Genomics Institute
Clemson University
100 Jordan Hall, Clemson, SC 29634, USA
                                                                                                                                                                                                                                                                                           Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Spermatoidae, Oryzeae, Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AQ157105 1inear GSS 12 nbxb0008P12r CUGI Rice BAC Library Oryza sativa (japonica cultivar-group) genomic clone nbxb0008P12r, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genome Center
University of Washington
Box 352145, Seattle, WA 98105-2145,
                           High quality sequence stop: 424.
                                                                                                     Tel: 864 656 7288
Fax: 864 656 4293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fax: 2066857244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: 2062216954
                                                 Class: BAC ends
                                                             Email: rwing@clemson.edu
Seq primer: GGAAACAGCTATGACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                 AQ157105.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACTTTTGAACCTCGTGG 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCGACGACGTCGACGGCATGGTGATCGTCCTCGGTACCGACACCGTGGAAGAGACCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCCTGGAAGAAACCGCC 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGAC 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTACCGCAGCTCAAGGGCATCGTCATCGTCCGCGGCGAACAGGTGTTCCAGATCGCCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGCCGACACGCGCCTCCAACACCGCCGAAGGTCCCGGTGGACCAGTTGCTGGCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         eceeccaacaececcaectaecaeecreccaaeerreecerceacaaecrearrecceec 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCTTCCTCACCCTGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATAGCTTCACCATCGAGAACCTGCTGGATCTGGCCAAGACCGTCACCGACCTGTCCGAT 141
                                                                                                                                                                                                                                                                             (bases 1 to 644)
                                                                                                                                                                                                                                                           R.A. and Dean, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        craymond@u.washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Pseudomonas aeruginosa"
/mol_type="genomic DNA"
         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:287"
/clone="msh2_1835"
/clone_lib="msh"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="genomic DNA"
/strain="MSH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="Environmental isolate. Whole genomic shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 802
                                                                                                                                                                                                                                                                                                                                                                                                                   GI:3554130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13.7%;
71.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 139; DB 8;
Pred. No. 3.1e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                           Rice
                                                                                                                                                                                                                                           Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSS 12-SEP-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             201
```

र् 밁 S 문 ঠ 밁 Ş 문

```
RESULT 7
BH376509/c
                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                              DEFINITION
        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     237
                                                                                                                                                                                                                                                               417
                                                                                                                                                                                                                                                                                                       535
                                                                                                                                                                                                                                                                                                                                                 357
                                                                                                                                                                                                                                                                                                                                                                                           475
                                                                                                                                                                                                                                                                                                                                                                                                                                   297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175 GGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTG 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                224;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57
AG-ND-137P15.TF.1 ND-TAM Anopheles gambiae genomic clone AG-ND-137P15, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    h 9.0%;
Similarity 50.3%;
                                                                                                                                                                                                                  TGGTTCCGCCTGCCGGCCAAGCGCC 619
                                                                                                                                                                                                                                                                                                    ACCGAAGCCTTCAAGAGCGCCTGGGGCCCGCTGGGCATGGTGGAAGGCAAGTCGTAC 594
                                                                                                                                                                                                                                                                                                                                                                                                                                     NACATTGCCGACGCGGTTCGCATCGCTGCATCTGAGACCGCCGCGGTCTGGGCGTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCACCGACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCTGCAGGACAAGAGACCATCTCGCCGACCCCAAGATCGACGGTGTCGTCACGCAC 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCAT 294
                                                                                                                                                                             ATCGTGCACCCGCGCCCGGTGTGCC 501
                                                                                                                                                                                                                                                                                                                                                 TTGTGTTTCGAGCAGGAGTTTCATGCAGCCCGCGACGTGACGAAGTCCCACACCTCTCGC
                                                                                                                                                                                                                                                                                                                                                                                         GTGACCATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAG 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACCTGTACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGGTCGTCTTTACCGGTGCGCAGCGCGCAGCCGATGAACCGGATGGCGATGGTCCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGATCGTCGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAACCGACACGATGGAGGAGAGCGCCTATATGGCCGATCTTCTCATCGATAGCGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCGACACGTTCATTTCTGCCGAACATGGGAAGCTGGGTGAAGTCGATGGTGACTCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /cloime_lib="CUGII Rice BAC Library"
//cloime_lib="CUGII Rice BAC Library"
//cloime_lib="CUGII Rice BAC Library"
//cloime_lib="CUGII Rice BAC Library"
//cloime_libe="CUGII Rice BAC Library Rice BAC Library Contains 36,864 Cloimes with an average insert size of 128.5 Kb providing 10.9 haploid genome equivalent of 431 Mbp
//cloime_library contains 36,864 Cloimes with an average insert size of 128.5 Kb providing 10.9 haploid genome equivalents. The deep coverage allows the isolation a particular sequence with a probability of 99.9 * Two high density filters, each containing 18,432 cloimes (doubly spotted), represent the whole library for colony screening."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Oryza sativa
/mol_type="genomic_DNA"
/cultivar="Nipponbare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tissue_type="Leaf"
lab_host="E. coli DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone="nbxb0008P12r"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'db_xref="taxon:39947"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 91.4; DB 8; Length 644; Pred. No. 4.2e-09; O; Mismatches 221; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (japonica cultivar-group)"
                                                                    GSS 10-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      354
                                                                                                                                                                                                                                                                                                                                                   416
                                                                                                                                                                                                                                                                                                                                                                                                                                       356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            236
```

Wed

Mar

08:59:37 2005

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                       문
                                                                                                           श्
                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 217;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                            421
                                                                                                                     361
                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This clone is from an A. gambiae BAC library (ND-TAM) provided by P.H. Collins and sequenced by The Institute for Genomic Research (TIGR). The BAC library was generated from A. gambiae PEST strain DNA. All DNA was extracted from newly hatched first instar larvae to minimize the inclusion of DNA from microorganisms that inhabit the gut. The DNA is derived from mixed sexes of larvae. The BAC library was constructed at Texas AxM University BAC Center University, College Station, Texas 77843-2123, USA using a HindIII Seq primer: M13 For Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 757)
Hong, Y.S., Hogan, J.R., Wang, X., Sarkar, A., Sim, C., Loftus, B.J., Ren, C., Huff, B.R., Carlile, J.L., Black, K., Zhang, H.-B., Gardner, M.J. and Collins, F.H.

Construction of a BAC library and generation of BAC end sequence-tagged connectors for genome sequencing of the African malaria mosquito Anopheles gambiae

Mol. Genet. Genomics 268 (6), 720-728 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9712 Medical Center Dr., Rockville, Tel: 301 838 0208
Fax: 301 838 3543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Other_GSSs: AG-ND-137P15.TR.1
Contact: Brendan J Loftus
Department of Eukaryotic Genomics
The Institute for Genomic Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Nematocera, Culicoidea,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Anopheles gambiae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: bjloftus@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Anopheles gambiae (African malaria mosquito)
TACAACGCCGTGGCCGGCCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACC
                                                                                                                                                                                                                                                                                                      AGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACC 300
                                                                                                                                                                                                                                                                                                                                                                                               CAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGC
                                                                                                                                                                                                              GACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAG 180
                                                                       GTCCTGATTGGCGCACAGCGCAACGCCTCGGTTTCAGACTTTGACGGTCCGCGCAACTTG
                                                                                                                     GTCGTGGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTG
                                                                                                                                                                GATACGCTGGAGGAAACAGCTTTTTGGCTTGATCTGACAGTGAAGTCCAATAAACCAATC
                                                                                                                                                                                                                                                         GCTGTGCAAGACGCTATCAACAAGTCAGACGTTGCTGGCGTGATCGTTTCTCATGGCACA
                                                                                                                                                                                                                                                                                                                                                    AACTTATCCAACGTTCCATCGGACTACATGGGGCCTGAGCGCTGGGTCCAGCTCACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCGATGATCTTCTTGGCTACGGTGCCTGATGTAGGCAAGTACGCCAAGATCCAGGTAAAC 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="AG-ND-137P15"
/clone_lib="ND-TAM"
/note="Vector: pECBAC1; Site_1: HindIII"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="genomic DNA"
/strain="PEST"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Anopheles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             db_xref="taxon:7165"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:17322651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 89.8; DB 8;
Pred. No. 9.3e-09;
0; Mismatches 212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 757;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                            480
                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                           451
                                                                                                                                                                                                                                                                                                                                                    511
                                                                                                                     420
                                                                       331
                                                                                                                                                                  391
                                                                                                                                                                                                                                                                                                                                                                                                 240
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
ð
                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BH371112/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                          Matches
                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                  source
  194 TCGCCTCCGAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAGCAGCGTGGCCGAGC 253
                                             618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hong, Y.S., Hogan, J.R., Wang, X., Sarkar, A., Sim, C., Loftus, B.J., Ren, C., Huff, B.R., Carlile, J.L., Black, K., Zhang, H.-B., Gardner, M.J. and Collins, F.H.
Construction of a BAC library and generation of BAC end sequence-tagged connectors for genome sequencing of the African malaria mosquito Anopheles gambiae
Mol. Genet. Genomics 268 (6), 720-728 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Anopheles gambiae
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Nematocera; Culicoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This clone is from an A. gambiae BAC library (ND-TAM) provided by F.H. Collins and sequenced by The Institute for Genomic Research (TIGR). The BAC library was generated from A. gambiae PEST strain DNA. All DNA was extracted from newly hatched first instar larvae to minimize the inclusion of DNA from microorganisms that inhabit the gut. The DNA is derived from mixed sexes of larvae. The BAC library was constructed at Texas A&M Universty BAC Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville,
Tel: 301 838 0208
Fax: 301 838 3543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BH371112 663 bp DNA linear GS AG-ND-137P15.TF ND-TAM Anopheles gambiae genomic clone AG-ND-137P15, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BH371112.1 GI:17317237
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seq primer: M13 For Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     partial digest.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             University, College Station, Texas 77843-2123, USA using a HindIII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Other_GSSs: AG-ND-137P15.TR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Brendan J Loftus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bmail: bjloftus@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTITIAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCTTCAAG 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTAACGCTGTGCGCATCGCTGTTGATCCCCAATCCAAGGATCGTGGCGCCATGCTGGCG
                                             TTGGCTACGGTGCCTGTGTAGGCAAGTACGCCAAGATCCAGGTAAACAACTTATCCAACG
                                                                                     TTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGAGCAGGTGATGCAGA 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAACGACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 663)
                                                                                                                                          Conservative
                                                                                                                                                                                                                                              /db_xref="taxon:7165"
/clone="Ag-ND-137P15"
/clone lib="ND-TAM"
/note="Vector: pECBAC1; Site_1: HindIII"
                                                                                                                                                                                                                                                                                                                                             strain="PEST"
                                                                                                                                                                                                                                                                                                                                                                  organism="Anopheles gambiae"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                   ocation/Qualifiers
                                                                                                                                                          49.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (African malaria mosquito)
                                                                                                                                     0
                                                                                                                                     Score 84.2; DB 8;
Pred. No. 1.4e-07;
0; Mismatches 218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20850,
                                                                                                                                                                                Length
                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSS 10-DEC-2001
                                                                                                                                     0
                                                                                                                                     Gaps
                                             559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       271
                                                                                                                                       0
```

618

599 678 659

738

```
\delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 9
CL694348/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ई
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     음 중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                               Query Match 8.3
Best Local Similarity 49.1
Matches 253; Conservative
                                                                                                                                                                                                                                                               BOUTCE
                                                                                                                                                                                                                                                                                            Max-Planck-Institute for Developmental Biology Spemannstr. 37-39, Tuebingen D-72076, Germany Tel: 00497071601371

Pax: 00497071601498

Email: ralf.sommer@tuebingen.mpg.de
This library was generated at Caltech, Pasadena, 1 sequenced at Vancouver, Canada.

Seq primer: T7

Seq primer: T7

Class: fosmid ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CL694348 10-JUL-2004 PRI0164a_A10_2 - PRI0164a_BR (787) Mixed stage fosmid library of P. pacificus var. California Pristionchus pacificus genomic, genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pristionchus pacificus
Nucleic Acids Res. 32 (1),
Contact: Sommer RJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 787)
Srinivasan, J., Otto, G.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             survey sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Neodiplogasteridae; Pristionchus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Nematoda; Chromadorea; Diplogasterida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pristionchus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pristionchus pacificus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CL694348.1 GI:50216256
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Evolutionary Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AppaDB: an AcedB database
              GGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCG----CCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTATCAACAAGTCAGACGTTGCTGGCGTGATCGTTTCTCATGGCACAGATACGCTGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTGAGTTCGGCT 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccreeecccecr 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCATCGCTGTTGATCCCCAATCCAAGGATCGTGGCGCCATGCTGGCGATGAACAACCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGTGGCCAGCAACAAGGACTCGCGCGCGAAGGGCGTGCTGGTGACCATGAACGACGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCATGCGCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGG 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ANACCGCCTACTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTT 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCGGACACCCCTGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCCATCGGACTACATGGGGCCTGAGCGCTGGGTCCAGCTCACTGCTGCTGCAAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAACGCTACCAAGTATGTCACCAAGACACACACTGCCAACGTTGAAACTTTTTAAGTTCT 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCAAGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACAGCGCAACGCCTCGGTTTCAGACTTTGACGGTCCGCGCAACTTGCTTAACGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AMACAGCTTTTTGGCTTGATCTGACAGTGAAGTCCAATAAACCAATCGTCCTGATTGGCG
                                                                                                                                                          /clone_lib="Mixed stage var. California"
                                                                                                                                                                                                          /organism="Pristionchus
/mol_type="genomic_DNA"
/strain="California"
                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                        /note="Vector:
                                                                                                                                                                                           _xref="taxon:54126"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pacificus
                                                                8.3%;
                                             Score 84; DB y
Pred. No. 1.6e-
0; Mismatches
                                               0;
                                                                                                                                        pEpifos-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kahlow, U., Geisler, R. and Sommer, R.J. for the nematode satellite organism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D421-D422
                                                                  DB 9; 1
1.6e-07;
                                                                                                                                                                                                                                             pacificus"
                                                                                                                                                                         fosmid library of
                                                                                                                                         Fosmid vector
                                                   260;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (2004)
                                                                                                                                                                                                                                                                                                                                                       Pasadena,
                                                                                  Length 787;
                                                 Indels
                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                            ָּש
                                                                                                                                                                                                                                                                                                                                                         and
                                                 u
٠
                                                                                                                                                                            pacificus
                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                         end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     319
                558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 10
AQ990947/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                     FEATURES
                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                    Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AQ990947 724 bp
Rfc01794 Photorhabdus luminescens
                                                                                                                       Contact: ffrench-Constant RH
Department of Biology and Biochemistry
University of Bath
South Building, Bath BA2 7AY, UK
Tel: (44) 1225 826621
Fax: (44) 1225 826779
Email: bssrfc@bath.ac.uk
This is one of 2,122 random reads from the M13 library. For annotation of identified clones (BLASTX, BLASTN and mapping to B. coli K12 genome) please see ffrench-Constant et al. 2000, Nucleic
                                                                                                                                                                                                                                                                                                                                     ffrench-Constant, R.H., Waterfield, N., Burland, V., Perna, N.T. Daborn, P.J., Bowen, D. and Blattner, F.R.
A genomic sample sequence of the entomopathogenic bacterium photorhabdus luminescens W14: potential implications for via Appl. Environ. Microbiol. 66 (8), 3310-3329 (2000)
                                                                                                                                                                                                                                                                                                                      Appl. Environ. Microbiol. 20378633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Photorhabdus luminescens
Photorhabdus luminescens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AQ990947.1 GI:9649541 GSS.
                                                                                                                     coli K12 genome) please see
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Photorhabdus
                                                                                                                                                                                                                                                                                                      10919786
                                                                                                                                                                                                                                                                                                                                                                                                                                              Enterobacteriaceae; Photorhabdus
                                                                                                        Acids Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGGCATCGTTAGCGCTGGCGTGGGTAACGGCAACCTGTATAAAACCGTATTTGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCCCGCTGGGCATGGTGGAAGGCAAGTCGTACTGGTTCCGCCTGCCGGCCAAGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGCAGATCCAGCAGATCTTCAATCAGTACTAATCA 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGAGCTGCAGCGCATTTTCTGGGAATACTGATAA 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGAACCCGCAGAAGGCCCGCATCCTGGCGATGGTGGCAATGACCAAGACCCAGGACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTACCACTCAGGATGCCGAAGTGGATGATGCGAAATACGGCTTCGTCGCCTCTGGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCGTGCTGCGTAACGCCGAGCAGCCCGACGACAAGAACGACTGGGTCGTGGCCCACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGCGCTGATCCATGCCGGCACCGGCAATGGCTCGGTGTCGTCGCGGGTGGTGCCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTTATAACTACGCTAACGCATCCGATCTTCCGGCTAAAGCACTGGTAGATGCGGGCTAT 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTACAGCTATGGCAACGTCACCGACACGGCCTACAAGGCCCTGGCACAGAACGGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACACGGTCAACTCCGAGTTCGACATCAAGCAGATCAGCAGCCTGCCCCAGGTGGACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTCCTCTGGGTTACATTCACAACGGTAAGATTGACTACCAACGTACCCCGGCACGTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGAACCCGCAAAAAGCGCGCGTTCTGCTGCAACTGGCTCTGACGCAAACTAAAGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTGCAACCGCTGCGAAAAACGGCACTGCAGTAGTGCGTTCTTCCCGCGTACCGACGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 724)
                                                                                      primer: M13
                                                                    shotgun
                  /organism="Photorhabdus
                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        luminescens
                                                                                      Forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        s strain W14 M13 library
clone PLG01794, genomic survey
                    luminescens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
```

GSS 14-AUG-2000

299 978 918 419 479 798

for virulence

ORIGIN

```
RESULT 11
AQ500605/c
LOCUS
                                                                                                                                                                                JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               224
                                                                 Contact: Kumar A
Michael Snyder, Dept. of Mol.
Yale University
P.O. Box 208103, New Haven, C
Tel: 203 432 9949
Fax: 203 432 6161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       104 AGGCTGCCAAGGTTGGCGTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        207;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44 TGGCCACCGGCGCACCATCGCCGGCGCTGGCGCCAGCGCGGCCAACAGCGCCACCTACC
                                                                                                                                                                                       1 (bases 1 to 766)
Ross-Macdonald, P., Roemer, T., Coelho, P.S.R., Agarwal, S., Kumar, A.,
desEtages, S.A., Cheung, K.-H., Sheehan, A., Symoniatis, D., Jansen, R.,
Umansky, L., Heidtman, M., Nelson, K., Iwasaki, H., Kanada, D., Lugo, R.,
Hager, K., Miller, P., Roeder, G.S. and Snyder, M.
Large-Scale Analysis of the Yeast Genome by Transposon Tagging and
Gene Disruption
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                               GSS.
Saccharomyces cerevisiae (baker's yeast)
Saccharomyces cerevisiae
Baccharomyces cerevisiae
Eukaryota, Pungi, Ascomycota, Saccharomycotina, Saccharomycetes,
Saccharomycetales, Saccharomycetaceae, Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genomic 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AQ500605 766 bp DNA linear V36C6 mTn-3xHA/lacZ Insertion Library Saccharomyces genomic 5', genomic survey sequence.
Email: anuj.kumar@yale.edu
te of mTn-3xHA/lacZ insertion.
Seq primer: GGCCTTCTTTCTTTGGAAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AQ500605.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAATGTGCGCGGCGAGCAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACGGCATGCTCAACCT 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTATCACCCACGGTACTGACACGATGGAAGAAACCGCTTACTTCCTCGATCTCACTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGCTGGAAGGGTTGCTATTGATGAATTAGTCAATGCTGTTCCTGAGATCAAAAATATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGGCCCGTTAAATCT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTGCCAGAAGCCGATAGTCATGGTTGGCGCGATGCGCCCATCTACGGCGCTTGGTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGACCGACAAGCCGATCGTCGTCGTCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCATCACCCATGGCACCCGACACCCTGGAAGAAACCGCCTACTTTTTTGAACCTCGTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTTGACGCTAGCGAAAAGAATCAAC-----GCTGATTGTGACAAAACCGATGGTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTCAAGCTGGCAAGCAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       library.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Genomic DNA from strain W14 was size selected kb) and then cloned into M13 Janus."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /dev_stage="primary phase variant"
/clone_lib="Photorhabdus luminescens strain W14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="PLG01794"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="genomic DNA"
/strain="W14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:29488"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8.1%;
55.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:4706315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                       of Mol. Cell. and Dev. Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 82;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                               녆
                                                                                                               06520-8103,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.2e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        160; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 724,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  M13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              263
```

र् 밁 श्च 문 र् 밁 ঠ 문 र् 밁 र् 밁 ş

KEYWORDS VERSION

TITLE

```
RESULT 12
AQ500657/c
LOCUS
                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           გ
                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 195
                                                                                  JOURNAL
                                                                                                                          TITLE
                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180 GCAGGTGATGCAGATCGCCTCCGAAAGCATCACCAACGACCTGCTCCAAGCTGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120 CGTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGA 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          195;
                                                                                                                                                                                                                                                                                                                         AQ500657.1
GSS.
                                                      Gene Disruption Unpublished (1999) Contact: Kumar A
                                                                                                                 1 (bases 1 to 843)
Ross-Macdonald, P., Roemer, T., Coelho, P.S.R., Agarwal, S., Kumar, A., desEtages, S.A., Cheung, K.-H., Sheehan, A., Symoniatis, D., Jansen, R., Umannky, L., Heidtman, M., Nelson, K., Iwasaki, H., Kanada, D., Lugo, R., Hager, K., Miller, P., Roeder, G.S. and Snyder, M.
Large-Scale Analysis of the Yeast Genome by Transposon Tagging and
                                                                                                                                                                                                                                                                                                                                                                                    AQ500657
843 bp DNA linear (V34F11 mTn-3xHA/lacZ Insertion Library Saccharomyces genomic 5', genomic survey sequence.
Michael Snyder, I
Yale University
P.O. Box 208103,
                                                                                                                                                                                                                                                            Saccharomyces cerevisiae (baker's yeast)
Saccharomyces cerevisiae
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Class:
                                                                                                                                                                                                                                           Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                    AQ500657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTATATGATTTAATAGAAGCCGTCCCATCTTTAGCTGAGAAGGCAGATCTGGACTATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGAACGACGAGATCCAGTCCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATATCAAGCAGTGTCTATCGCTGCTTCTGAGAAATCACTGGGTCGTGGCACGATGATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGACACCCTGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAAGTGTCTAACGTTGGTTCACATTCTTTAAACTATACGCATCTGATCCCCATTGTATCA 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTATCGCAGGCGCTÁTGCGTCCAGCCACTGCCÁCGTCTGCTGATGGCCCAATGAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGTCGTGGTCGGTTCCATGCGCCCCGGCACGCCACGGCACGGCATGCTCAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGACACTATGGAGGAGACAGCTTTCTTCTTAGATTTGACCATAAATTCAGAGAAGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGTATCTCCGAGGCACTAGCCTCTGATGATTACGCTGGTGCGGTTGTCACTCATGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTAAACGATCGTATTGCCTCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  transposon-tagged.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone lib="mTn-3xHA/lacZ Insertion Library"
/note="Vector: pHSS6-Sa1; A yeast genomic DNA library
/lacking mitochondrial DNA) was prepared in pHSS6-Sa1;
genomic DNA was size-fractionated (DNA of roughly 2-3 kb
in length) prior to cloning. This library was
subsequently mutagenized with a mTn-3xHA/lacZ
minitransposon containing lacZ, URA3, and tet resistance."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Saccharomyces cerevisiae"
/mol type="genomic DNA"
/db xref="taxon:4932"
/lab_host="E._coli"
                                                                                                                                                                                                                                                                                                                                                 GI:4706367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8.0%;
                                     Dept.
  New Haven,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 81; DB 8
Pred. No. 6.9e-
0; Mismatches
                                          of Mol. Cell. and Dev. Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       504
  CT 06520-8103, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6.9e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 766;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                            GSS 29-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                              cerevisiae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                355
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                        RESULT 13
AQ501722/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEATURES
                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                          PERSION
                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Si
Matches 192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                AQ501722 453 bp DNA linear V15G1 mTn-3xHA/lacZ Insertion Library Saccharomyces genomic 5', genomic survey sequence.
                 1 (bases 1 to 453)
ROSE-Macdonald,P., Roemer,T., Coelho,P.S.R., Agarwal,S., Kumar,A.,
desEtages,S.A., Cheung,K.-H., Sheehan,A., Symoniatis,D., Jansen,R.,
Umansky,L., Heidtman,M., Nelson,K., Iwasaki,H., Kanada,D., Lugo,R.,
Hager,K., Miller,P., Roeder,G.S. and Snyder,M.
Large-Scale Analysis of the Yeast Genome by Transposon Tagging and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             te of mTn-3xHA/lacZ insertion.
Seq primer: GGCCTTCTTTTTGGAAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tel: 203 432 9949
Fax: 203 432 6161
                                                                                                                                                                 Saccharomyces cerevisiae (baker's yeast)
Saccharomyces cerevisiae
Saccharomyces cerevisiae
Eukaryots, Fungi, Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                        AQ501722
AQ501722.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: anuj.kumar@yale.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATCAAGCAGTGTCTATTGCTGCTTCTGAGAAATCACTGGGTCGTGGCACGATGATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGGTGATGCAGATCGCCTCCGAAAAGCATCACCAACGACGACCTGCTCAAGCTGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGAACGACGAGATCCAGTCCGGG 504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGTATCGCAGGCGCTATGCGTCCAGCCACTGCCACGTCTGCTGATGGCCCAATGAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTCGACAAGCTGATTGCCGGCGTGCCGGAGCTGGCCGACCTGGCCAATGTGCGCGGCGA 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTAAACGATCGTATTGCCTCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTACAACGCCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGCCAAGGGCGTGCTGGTGAC 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGTCGTGGTTCCATGCGCCCCGGCACCCCATGTCCGCCGACGGCATGCTCAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGACACTATGGAGGAGACAGCTTTCTTCTTAGATTTGACCATAAATTCAGAGAAGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGACACCCTGGAAGAAACCGCCTACTTTTGAACCTCGTGGAAAAGACCGACAAGCCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGTATCTCCGAGGCACTAGCTTCTGATGACTACGCTGGTGCGGTTGTCACTCATGNGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCGTGGCCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAAGTGTCTAACGTTGGTTCANATTCTTTANACTATACGCATCTGATCCCATTGTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTAAATGATNTAATAGGAĞCCĞTCCATTCTTTAĞCTGAGAAĞĞCACATCTĞGACTATCT 612
Disruption
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            transposon-tagged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone lib="mTn-3xHA/lacZ Insertion Library"/
/note="Vector: pHSS6-Sal; A yeast genomic DNA library
/lacking mitochondrial DNA) was prepared in pHSS6-Sal;
genomic DNA was size-fractionated (DNA of roughly 2-3 kb
in length) prior to cloning. This library was
subsequently mutagenized with a mTn-3xHA/lacZ
minitransposon containing lacZ, URA3, and tet resistance."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Saccharomyces cerevisiae"
/mol_type="genomic DNA"
/db xref="taxon:4932"
/lab_host="E, coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ocation/Qualifiers
                                                                                                                                                                                                                                                                                               GI:4707372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7.8%;
49.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 78.6; DB 8;
Pred. No. 2.3e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 843;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                      cerevisiae
                                                                                                                                                                                                                                                                                                                                                                                             GSS 29-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              419
```

밁 S 밁 8 밁 ð 밁 ঠ

밁 S 문 ર્ફ

```
RESULT 14
AQ501723/c
LOCUS
                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
                                                                            REFERENCE
AUTHORS
                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                       DEFINITION
   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bource
                                                                                                                                                                                                                                                                                                                                                                                                                          548
                                                                                                                                                                                                                                                                                                                                                                                                                                                               126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160;
                                                                                                                                                                                                                                                                                                                                                                                     66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (1999)
Contact: Kumar A
Michael Snyder, Dept. of Mol. Cell. and Dev. B:
Yale University
P.O. Box 208103, New Haven, CT 06520-8103, USA
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomyceteles; Saccharomycetales; Saccharomyces.

1 (bases 1 to 459)

Ross-Macdonald,P., Roemer,T., Coelho,P.S.R., Agarwal,S., Kumar,A desEtages,S.A., Cheung,K.-H., Sheehan,A., Symoniatis,D., Jansen,J Umansky,L., Heidtman,M., Nelson,K., Iwasaki,H., Kanada,D., Lugo,J Lager,K., Miller,P., Roeder,G.S. and Snyder,M.

Large-Scale Analysis of the Yeast Genome by Transposon Tagging as
                                                                                                                                                                                                                               AQ501723 MTn-3xHA/lacZ Insertion Library Saccharomyces genomic 5', genomic survey sequence.
AQ501723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Class: transposon-tagged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: anuj.kumar@yale.edu
te of mTn-3xHA/lacZ insertion.
Seq primer: GGCCTTCTTTCTTTGGAAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tel: 203 432 9949
Fax: 203 432 6161
                                                                                                                                                       Saccharomyces cerevisiae
                                                                                                                                                                                            AQ501723.1
GSS.
                                                                                                                                                                        Saccharomyces cerevisiae (baker's yeast)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                     G
G
G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGAGGCACTAGCCTCTGATGACTACGCTGGTGCGGTTGTCACTCATGGGACCGACACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGAGCTGGCCGACAGCAATGACGTCGATGGCATCGTCATCACCCATGGCACCGACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                          AGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCGTATTGCCTCTGGGTTTTGGACAACGAAAATGAATGCCAACTCTTTAGATACATTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGCGCTATGCGTCCAGCCACTGCCACGTCTGCTGATGGCCCAATGAATTTATATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACGAGATCCAGTCCGGGCGTGACGTGAGCAAGTCGATCAACATCAAGACCGAAGCCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGTGTCTATTGCTGCTTCTGAGAAATCACTGGGTCGTGGCACGATGATCACTCTAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGTGGCCGTGGCCAGCAACAAGGACTCGCGCGCCAAGGGCGTGCTGGTGACCATGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7.3%; ilarity 52.6%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone lib="mTn-3xHA/lacZ Insertion Library"
/note="Vector: pHSS6-Sa1; A yeast genomic DNA library
(lacking mitochondrial DNA) was prepared in pHSS6-Sa1;
genomic DNA was size-fractionated (DNA of roughly 2-3
in length) prior to cloning. This library was
subsequently mutagenized with a mTn-3xHA/lacZ
minitransposon containing lacZ, URA3, and tet resistan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Saccharomyces cerevisiae"
|mol_type="genomic DNA"
|/db_xref="Laxon:4932"
|lab_host="E. coli"
                                                                                                                                                                                                                GI:4707373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 73.6; DB 8; Pred. No. 2.5e-05; O; Mismatches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           resistance."
   Tagging and
                                                                                                                                                                                                                                                                                          29-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                Kumar,A.,
                                           Lugo, R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
```

Dieruption

```
REFERENCE
AUTHORS
                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                       RESULT 15
AQ872693/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEATURES
                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            283
                                                                                                                                                                                                                                                                                                                                                                                                                             548 AGAG 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yale University
P.O. Box 208103, Ne
Tel: 203 432 9949
Fax: 203 432 6161
                                                                                                                                                                                                                                                                                                                                                                                        3
Saccharomyces cerevisias (baker's yeast)
Saccharomyces cerevisiae
Saccharomyces cerevisiae
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.

1 (bases 1 to 553)
Ross-Macdonald, P., Roemer, T., Coelho, P.S.R., Agarwal, S., Kumar, A., desEtages S.A., Cheung, K.-H., Sheehan, A., Symoniatis, D., Jansen, R., Umansky, L., Heidtman, M., Nelson, K., Iwasaki, H., Kanada, D., Lugo, R., Hager, K., Miller, P., Roeder, G.S. and Snyder, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (1999)
Contact: Kumar A
Michael Snyder, Dept. of Mol. Cell. and Dev. B.
Yale University
P.O. Box 208103, New Haven, CT 06520-8103, USA
                                                                                                                                                                                                                                                                AQ872693
V34E5 mTn-3xHA/lacz
                                                                                                                                                                                                           AQ872693.1 GI:6285000
                                                                                                                                                                                                                                              cerevisiae genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: anuj.kumar@yale.edu
te of mTn-3xHA/lacZ insertion.
Seq primer: GGCCTTCTTTCTTTGGAAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGAGGCACTAGCCTCTGATGACTACGCTGGTGCGGTTGTCACTCATGGGGACCGACACTA 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGGTTCCATGCGCCCCGGCACCGCCATGTCCGCCGACGCATGCTCAACCTGTACAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGAGATCCAGTCCGGGCGTGACGTGAGCCAAGTCGATCAACATCAAGACCGAAGCCTTCA 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGTGTCTATTGCTGCTTCTGAGAAATCACTGGGTCGTGGCACGATGATCACTCTAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ccereccereccaecaacaaeaacrececececaaeeecerecreereaecareaaee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGGCGCTATGCGTCCAGCCACTGCCACGTCTGCTGATGGCCCCAATGAATTTATATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGAGCTGGCCGACAGCAATGACGTCGATGGCATCATCACCCATGGCACCGACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCGTATTGCCTCTGGGTTTTGGACAACGAAATGAATGCCAACTCTTTAGATACATTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGAAGAAACCGCCTACTTTTTGAACCTCGTGGAAAAAGACCGACAAGCCGATCGTCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           transposon-tagged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone lib-"mth-3xHA/lacZ Insertion Library"
/clone "Vector: pHSS6-Sal; A yeast genomic DNA library
(lacking mitochondrial DNA) was prepared in pHSS6-Sal;
genomic DNA was size-fractionsted (DNA of roughly 2-3)
in length) prior to cloning. This library was
subsequently mutagenized with a mth-3xHA/lacZ
subsequently mutagenized with a mth-3xHA/lacZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   minitransposon containing lacZ, URA3, and tet resistance."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="genomic DNA"
/db xref="taxon:4932"
/lab host="E. coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  organism="Saccharomyces"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7.3%;
52.6%;
                                                                                                                                                                                                                                            <u>ن</u>
د
                                                                                                                                                                                                                                          553 bp DNA linear
Insertion Library, strain AB972
5', genomic survey sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 73.6; DB 8;
Pred. No. 2.5e-05;
0; Mismatches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of Mol. Cell. and Dev. Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  144; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 459;
                                                                                                                                                                                                                                                                   GSS 08-NOV-1999
Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ፎ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367
```

```
JOURNAL COMMENT
吊
                              S
                                                                      片
                                                                                                    Ś
                                                                                                                                            밁
                                                                                                                                                                            S
                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 135; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
344
                                  446
                                                                      404
                                                                                                        386
                                                                                                                                              464
                                                                                                                                                                                  326
                                                                                                                                                                                                                  524 ATGACTACGCTGGTGCGGTTGTCACTCATGGGACCGACACTATGGAGGAGACAGCTTTCT
                                                                                                                                                                                                                                                        266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P.O. Box 208103, New Haven,
Tel: 203 432 9949
Fax: 203 432 6161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seq primer: GGCCTTCTTTCT:
Class: transposon-tagged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: anuj.kumar@yale.edu
te of mTn-3xHA/lacZ insertion.
Seq primer: GGCCTTCTTTCGAAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Kumar A
Michael Snyder, Dept.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gene Disruption Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yale University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Large-Scale Analysis
                                  ACAAGGACTCGCGCGGCAAGGGCGTGCTGGTGACCATGAACGACGAGATCCAGTCCGGG
CTGAGAAATCACTGGGTCGTGGCACGATGATCACTCTAAACGATCGTATTGCCTCTGGG
                                                                                                        GCACCGCCATGTCCGCCGACGGCATGCTCAACCTGTACAACGCCGTGGCCGTGGCCAGCA 445
                                                                                                                                                                                                                                                      ATGACGTCGATGGCATCGTCATCACCCATGGCACCGGACACCCTGGAAGAAACCGCCTACT
                                                                      CCACTGCCACGTCTGCTGATGGCCCAATGAATTTATATCAAGCAGTGTCTATTGCTGCTT 345
                                                                                                                                                                                TTTTGAACCTCGTGGAAAAGACCGACAAGCCGATCGTCGTGGTCGGTTCCATGCGCCCCG
                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 /clone lib="mTn-3xHA/lacz Insertion Library, strain AB972" /note="Vector: pHSS6-Sal; A yeast genomic DNA library was prepared in pHSS6-Sal; genomic DNA was size-fractionated (DNA of roughly 2-3 kb in length) prior to cloning. This library was subsequently mutagenized with a mTn-3xHA/lacz minitransposon containing lacz, URA3, and tet resistance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Saccharomyces cerevisiae"
/mol_type="genomic DNA"
/strain="AB972 - trp1 r(0) (S288C bac
/db_xref="taxon:4932"
/lab_host="E. coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 553
                                                                                                                                                                                                                                                                                                          7.2%;
                                                                                                                                                                                                                                                                                        <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of the Yeast Genome
                                                                                                                                                                                                                                                                                                           Score 72.6; DB 8;
Pred. No. 4.2e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           œ,
                                                                                                                                                                                                                                                                                        Mismatches 104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CT 06520-8103, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (S288C background)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 by Transposon Tagging
                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                              553;
                                                                                                                                                                                                                                                                                        0;
286
                                  504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                385
                                                                                                                                              405
                                                                                                                                                                                                                    465
                                                                                                                                                                                                                                                        325
```

Search completed: March 22, 2005, 12:54:00 Job time : 3921 secs

Ihis Page Blank (uspto)

```
Run
                                                                                                                                                          Database
                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                         Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Perfect score:
                                                                                                                                                                                                                                                                    seq length: 0
seq length: 2000000000
A Geneseq_16Dec04:*
1: geneseqp1990s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2003s:*
6: geneseqp2003bs:*
7: geneseqp2003bs:*
8: geneseqp2004s:*
                                                                                                                                                                                                                                                                                                                                                                 2105692 seqs, 386760381 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           March 18, 2005, 21:13:22; Search time 168 Seconds (without alignments) 773.521 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 KEVENQQKLANVVILATGGT......MVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-842-628-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.6 (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                          Gapext 0.5
                                                                                                                                                                                                                                                                                                                                   2105692
```

Pred. No. : score great and is der: No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.

## SUMMARIES

25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	U	4	ω	2	1	Result No.
361.5	372.5	465	485	517	528	535.5	536.5	559	560.5	602.5	677.5	677.5	685.5	710.5	711	717	749	749	749	758	782	1063.5	1432.5	1680	Score
21.5	22.2	27.7	28.9	30.8	31.4	31.9	31.9	33.3	33.4	35.9	40.3	40.3	40.8	42.3	42.3	42.7	44.6	44.6	44.6	45.1	46.5	63.3	85.3	100.0	Query Match Length
322	333	100	362	379	371	451	378	374	378	378	348	326	348	346	356	364	348	348	327	375	348	374	393	336	
.4.	7	N	œ	8	8	8	8	æ	8	8	σ	σ	σ	7	7	N	σ	-	N	8	ω	6	7	N	8
AAG82409	ADH86728	AAR37660	AD007190	AD007189	ADO07185	AD007187	ADN97130	ADO07183	ADO07181	AD007179	ABP98615	ABP98616	ABM68938	ADF05106	ABO61384	AAW98609	ABP98617	AAP70348	AAR21555	ADI36574	AAW90867	ADA35175	ABO73618	AAR59739	ID
Aag82409 S. epider	Adh86728 Enterococ	Aar37660 Pseudomon	Ado07190 Saccharom	Ado07189 Penicilli	Ado07185 Fusarium	Ado07187 Fusarium	Adn97130 ASPA01 as		Ado07181 Aspergill		Abp98615 Erwinia c	Abp98616 Mature Er	Abm68938 Photorhab	Adf05106 Bacterial	Abo61384 Klebsiell	Aaw98609 H. pylori		Aap70348 Sequence	Aar21555 L-asparig	Adi36574 Bacillus	Aaw90867 L-asparag	Ada35175 Acinetoba	Abo73618 Pseudomon	ש	Description

Chromosomal DNA from Pseudomonas sp. 7A (ATCC 29598) was used to construct a genomic library in Escherichia coli LE392. Screening with mixed oligonuclectide probes was used to isolate a glutaminase- encodir clone. This was sequenced using the primers given in AAQ68439-47. The gene can be used to manufacture recombinant glutaminase, free of Pseudomonas exotoxin, for use in e.g. HIV and cancer therapy. The gene may also be used in gene therapy protocols. (Updated on 25-MAR-2003 to

encoding

Recombinant glutaminase derived from Pseudomonas 7A - expressed in E. coli to increase yield and avoid Pseudomonas endotoxins for antiviral anticancer therapy.

and

Disclosure; Page 33-34; 60pp; English.

WPI; 1994-217891/26. N-PSDB; AAQ68438.

Pseudomonas exotoxin, for may also be used in gene correct PN field.)

Sequence 336 AA

5	44	43	42	41	40	9	38	37	36	35	34	S S	32	31	30	29	28	27	6
216.5	226.5	251	251	269.5	279	291	294.5	300	317	318.5	331.5	332	349.5	356	356	356	356	360.5	
12.9	13.5	14.9	14.9	16.0	16.6	17.3	17.5	17.9	18.9	19.0	19.7	19.8	20.8	21.2	21.2	21.2	21.2	21.5	
328	340	325	325	458	439	450	114	297	320	320	334	321	322	321	320	320	320	323	
œ	4.	4	4	7	4	œ	u	ហ	ഗ	ຫ	7	v	σ	80	œ	œ	σ	ហ	1
ADN46369	AAB96780	AAG92092	AAB79696	ADM26903	AAB96655	ADN46622	ABU51451	ABP30464	ABB49122	ABP27236	ADC95320	ABP27237	ABM70762	ADR94759	ADM92242	ADK47071	ABU02502	ABB54049	
Adn46369	Aab96780	Aag92092	Aab79696	Adm26903	Aab96655	Adn46622	Abu51451	Abp30464	Abb49122	Abp27236	Adc95320	Abp27237	Abm70762	Adr94759	Adm92242	Adk47071	Abu02502	Abb54049	
Thermococ	Putative	C glutami	Corynebac	Hyperther	Putative	Thermococ	Helicobac	Streptoco	Listeria	Streptoco	B. faeciu	Streptoco	Staphyloc	Novel S.	S pneumon	Streptoco	S. pneumo	Lactococc	The Man Man and

# ALIGNMENTS

#### RESULT 1 AARS9739 ID AARS9739 gene therapy; Escherichia coli. Glutaminase; antiviral; virucide; AAR59739; 04-DEC-1992; 04-DEC-1992; WO9413817-A1. Pseudomonas sp. Pseudomonas glutaminase. AAR59739 standard; protein; 336 Roberts J, Macallister TW, 23-JUN-1994 25-MAR-2003 12-JAN-1995 (MEME-) ME MEDICAL ENZYMES AG. (revised) (first en 92WO-US010421. 92WO-US010421. entry) Sethuraman ₽ anticancer; cancer therapy; HIV virus; 'n, Freeman Ą

```
RESULT 2
ABO73618
ID 73618
ID 73618
ID 73618
AX ABO7
AX ABO7
XX ABO7
XX Bact
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                         The invention relates to Pseudomonas aeruginosa polypeptides and the polypurcleotides encoding them. The sequences are useful in diagnosts and therapy of pathological conditions, as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from a bacterial infection, for evaluating a compound, such as a polypeptide, for the ability to bind a P. aeruginosa nucleic acid, as components of effective antibacterial targets, as targets for antibacterial drugs,
                                                                                                                                                                                                                                                                                                      Novel isolated nucleic acid encoding Pseudomonas aeruginosa polypeptide, useful as molecular targets for diagnostics, prophylaxis and treatment of pathological conditions resulting from bacterial infection.
                                                                                                                                                                                                                                                   Disclosure; SEQ ID NO 22364; 455pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rubenfield MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18-FEB-1998;
27-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US6551795-B1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacterial infection; Pseudomonas aeruginosa infection; antibacterial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pseudomonas aeruginosa polypeptide #5793.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AB073618;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABO73618 standard; protein; 393 AA
  including anti-P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GENO-)
                                                                                                                                                                                                                                                                                                                                                                                                                      2003-615309/58.
DB; ABD07189.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LAQNGAKAL IHAGTGNGS VSSR VVPALQELRKNGVQ I IRSSR QQGGFVLRNAEQPDDKND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APKSAMGPLGMVVEGKSYMFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QVMQIASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APKSAWGPLGMVVEGKSYWPRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QVMQIASESITNDDLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEVENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEVENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LAQNGAKAL I HAGTGNGS VS SRVVPALQELRKNGVQ I I RS SRQQGGFVLRNAEQPDDKND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 1680; DB 2; llarity 100.0%; Pred. No. 5.7e-131; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-0074788P.
98US-0094190P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         THERAPEUTICS CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9908-00252991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nolling
  aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Deloughery
  drugs,
     as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ú
  templates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bush
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
        recombinant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
```

```
RESULT 3
ADA35175
ID ADA3
XX ADA3
XX ADA3
XX ADA3
XX ACI
AN US6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  នន្តន្តន្តន្តន្ត្
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       production of P. aeruginosa-derived peptides or polypeptides, as target components for diagnosis and/or treatment of P. aeruginosa-caused infection, and in detection of P. aeruginosa sequences or other sequences of Pseudomonas species using blochip technology. Sequences ABO67826-ABO84396 represent P. aeruginosa polypeptides of the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic format from USPTO at sequence.html
                             New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 393
                                                                                                          N-PSDB;
                                                                                                                                  WPI;
                                                                                                                                                                                     Breton
                                                                                                                                                                                                                                                                                       09-JUN-1998;
                                                                                                                                                                                                                                                                                                                                       04-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                          13-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                            US6562958-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Acinetobacter baumannii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Acinetobacter baumannii; bacterial disease; antibacterial; vaccine; plant blocontrol agent.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Acinetobacter baumannii protein #2336.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADA35175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADA35175
                                                                                                                                                                                                                                    (GENO-)
Acinetobacter baumanii proteins and nucleic acids, useful as r
diagnosing a bacterial disease, as components of antibacterial
cines, as targets for antibacterial drugs, or as biocontrol age
                                                                                                       2003-576092/54.
DB; ADA31049.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                284;
                                                                                                                                                                                  ့
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          μ
                                                                                                                                                                                                                                       GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APKSAWGPLGMVVEGKSYWERLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QVMQIASBSITNDDLLKLASSVABLADSNDVDGIVITHGTDTLBBTAYFLNLVBKTDKPI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEVAPQQKLSNVVILATGGTIAGAGASAANSATYTAAKVPVDQLLASVPQLKDIANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard; protein; 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DWVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LAQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSR-QQGGFVLRNAEQPDDKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AFKSPWGPLGMVVEGKSYWFRAPVKRHTVNSEFDIKQISALAPVEIAYSYGNVSDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VVVGSMRPGTAMSADGMLNLYNAVAVAGDKSARGKGVLITMNDEILSGRDASKMVNIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QVFQIASESFINENLLELGKTVAKLADSDDVDGIVITHGTDTLEETAYFLTLVEHTEKPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEVENQOKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DWIVAHDLNPQKARILAAVAMTKTQDSKELQRIFWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LAQAGAKAI IHAGTGNGSVPARVVPTLQELRKQGVQI IRSSHVNAGGFVLRNAEQPDDKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry
                                                                                                                                                                                                                                       THERAPEUTICS CORP
                                                                                                                                                                                                                                                                                       98US-0088701P
                                                                                                                                                                                                                                                                                                                                          9908-00328352
                                                                                                                                                                                  Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agent.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        85.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 1432.5; DB 7
Pred. No. 2.6e-110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                     reagents
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
```

agents

for

```
ARESULT 4
AAM90867
ID MAM9
AC AAM9
AC AAM9
AC AAM9
AC AAM9
AC AAM9
AC L-as
XX L-as
XX U-as
XX U-as
XX U-as
XX U-as
XX Unid
XX U-as
XX Unid
XX 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to isolated Acinetobacter baumannii nucleic acids. The A. baumannii nucleic acids and polypeptides are useful as respents for disgnosing a bacterial disease, as components of antibacterial vaccines, as targets for antibacterial drugs, to detect the presence of A. baumannii and other Acinetobacter species in a sample, in screening compounds for the ability to interfere with the A. baumannii life cycle or to inhibit A. baumannii infection, and as biocontrol agents for plants. The present sequence represents the amino acid sequence of an A. baumannii or the present sequence represents the amino acid sequence of an A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   plants. The present
baumannii protein.
WPI; 2000-351194/31.
N-PSDB; AAX82834.
                                                                               Qian 8,
                                                                                                                                                                                                                                                                                                                                                                                                                Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                L-asparaginase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   L-asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW90867;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW90867 standard; protein; 348 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example,
                                                                                                                                                                                        01-JUN-1998,
                                                                                                                                                                                                                                              01-JUN-1998,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          al Similarity
213, Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11 NVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPBLADLANVRGBQVMQIASESI
                                                                                                                                     INST MICROBIOLOGY CHINESE
                                                                            Wang Y, Meng G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LIHAGTGNGSVSSRVVPALQELR-KNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AMSADGMLNLYNAVAVASNKDSRGKGVLVTMVDBIQSGRDVSKSINIKTBAFKSAWGPLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRPGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   374 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TLVEGKPYWFRQSVKRHTNASEFNIENIKGDALPTVQIVYGSDSMLPDAYEAYAKAGAKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MVVEGKSYMFRLPAKRHTVNSEFDIKQI--SSLPQVDIAYSYGNVTDTAYKALAQNGAKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOKELLQIARQVNELVKKPTVNGVVITHGTDTLEETAPPLNLVVHTDKPIVLVGSMRPST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NVVVVATGGTIAGAGASSANSATYTAAKVPVDALINAVPQIQDLANVSGIQALQVASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 6462; 328pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NPQKARLLAALALTKTNDAKBIQRMFWQY 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       I IHAGTGNGSVAKYI VPTLQNLHDKNGIQI IRSSRVPQGFVLRDAEQPDSKYGWVAAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALSADGPLNLYSAVALAASDDAKNKGVMVLMNDSIFAARDVTKGINIHTNAFVSQWGALG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                                           98CN-00102046
                                                                                                                                                                                                                                              98CN-00102046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                fermentation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63.3%; Score 1063.5; DB 6; 64.7%; Pred. No. 1.1e-79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ed. No. 1.10
Mismatches
                                                                                                                                     ACAB
                                                                                                                                     SCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            225
```

```
ADI36574
ADI36574
ID ADI3
XX Baci
XX Secr
XX Baci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This invention describes a novel L-asparaginase-producing recombinant bacteria and its fermentation culture method. The new cell is produced using standard recombinant techniques. The enzyme gene expressed in the cell is different from the reported enzyme gene in sequence, and its individual amino acid composition is also different. The culture medium adopted for culturing the new bacterial cells is cheap and easily available, and the fermentation process used to grow the cells and express the enzyme is simple and easy to implement. This sequence represents an L-asparaginase which is described in the method of the
                                                                                                                                                                               Bacillus
                                                                                                                                                                                                                                 Secreted
                                                                                                                                                                                                                                                                Bacillus subtilis L-asparaginase protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 348 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New structured L-asparaginase bacterial host cell and its
                                                                                                 Protein
                                                                                                                                                                                                                                                                                                15-APR-2004
                                                                                                                                                                                                                                                                                                                                 ADI36574;
                                                                                                                                                                                                                                                                                                                                                                  ADI36574
                                                 US2003186380-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  159; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ည
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GIVSÄGVGNGNLYKSVFDTLATAAKNGTAVVRSSRVFTGATTQDAEVDDAKYGFVASGTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STSMSADGPFNLYNAVVTAADKASANRGVLVVMNDTVLDGRDVTKTNTTDVATFKSVNYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTBAFKSA-WG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DMNDNVWLTLAKKIN--TOCDKTDGFVITHGTDTMEETAYFLDLTVKCDKPVVMVGAMRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRP 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LPNITILATGGTIAGGGDSATKS-NYTAGKVGVENLVNAVPQLKDIANVKGEQVVNIGSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE
                                                                                                                                                                                                                                 protein; L-asparaginase; acute lymphocytic leukaemia; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  NPQKARVLLQLALTQTKDPQQIQQIFNQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PLGMVVEGKSYMFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK 247
                                                                                                                                                                                 subtilis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLGYIHNGKIDYQRTPARKHTSDTPFDVSKLNBLPKVGIVYNYANASDLPAKALVDAGYD
                                                                                                                                                                                                                                                                                                (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2; 12pp; Chinese.
                                                                                                                                                Location/Qualifiers
                                                                                                               /label= Signal_peptide
                                                                                  note=
                                                                                                                                                                                                                                                                                                                                                                protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.5%; Score 782; DB 3; I
48.3%; Pred. No. 2.3e-56;
ative 59; Mismatches 107;
                                                                                                                                                                                                                                                                                                  entry)
                                                                                "Mature Bacillus
                                                                                                                                                                                                                                                                                                                                                                  375
                                                                                subtilis L-asparaginase protein'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     259
```

u

02-OCT-2003.

```
RRESULT 6
AAR21525
ID AAR2
XX AAR2
XX AAR2
XX AAR2
XX L-as
XX Puri
XX Puri
XX Y
PN WO92
XX WO92
                                                                                                                                                                                                                          र्
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOX CCCCCCCX SX PTT PTX RX PXX PT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to recombinant methods for producing secreted polypeptides having L-asparagiase activity. The invention is useful for production of a secreted protein having L-asparagiase activity, for use in producing L-asparate from L-asparagine. The invention is useful for treatment of leukaemia such as acute lymphocytic leukaemia. The present sequence is the Bacillus subtilis L-asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Production of a secreted polypeptide having L-asparaginase activity is treating leukemia, comprises cultivating a host cell comprising a nucleating a sequence encoding a secretory signal peptide linked to
                                   Brwinia chrysanthemi
                                                                                L-aspariginase
                                                                                                      10-JUN-1992
                                                                                                                             AAR21555;
                                                                                                                                                  AAR21555 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 34; SEQ ID NO 2; 22pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-APR-2003;
             WO9202616-A
                                                        Purification process; super-expression; lymphoblastic leukaemia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         second sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Thomas MD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (NOVO ) NOVOZYMES BIOTECH INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2004-088916/09.
)B; ADI36573.
                                                                                                                                                                                                           344
                                                                                                                                                                                                                                305
                                                                                                                                                                                                                                                                             245
                                                                                                                                                                                                                                                                                                    227
                                                                                                                                                                                                                                                                                                                           185
                                                                                                                                                                                                                                                                                                                                                  167
                                                                                                                                                                                                                                                                                                                                                                       126
                                                                                                                                                                                                                                                                                                                                                                                              107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      158;
                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                          47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    375
                                                                                                                                                                                                                     HDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                          AWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQN
                                                                                                                                                                                                                                                                                                                                                                      MRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKS- 184
                                                                                                                                                                                                                                                                                                                                                                                              GSTNIDNKILLKLAKRINHLLASDDVDGIVVTHGTDTLEETAYFLNLTVKSDKPVVIVGS
                                                                                                                                                                                                                                                                                                                                                                                                          ASESITNDDLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQI
                                                                                                                                                                                                           NSLNPQKARMLLMLALTKTNDPQKIQAYFNBY 375
                                                                                                                                                                                                                                                        GAKGIVFAGSGNGSLSDAAEKGADSAVKKGVTVVRSTRTGNGVVTPNQDYAE--KDLLAS
                                                                                                                                                                                                                                                                            GAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVA
                                                                                                                                                                                                                                                                                                    EMGFVGTIAD-DIYFNNEITRKHTKDTDFSVSNLDELPQVDIIYGYQNDGSYLFDAAVKA
                                                                                                                                                                                                                                                                                                                                                MRPSTAISADGPSNLYNAVKVAGAPEAKGKGTLVVLNDRIASARYVTKTNTTTDTFKSB
                                                                                                                                                                                                                                                                                                                                                                                                                                          KKDLPNIRILATGGTIAGADQSKTSTTEYKAGVVGVESLIEAVPEMKDIANVSGEQIVNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sloma A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2002US-0369192P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2003US-00406025
                                                                                                      (first entry)
                                                                                                                                                 protein; 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45.1%; Score 758; DB 8;
47.6%; Pred. No. 2.5e-54;
live 58; Mismatches 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  English
                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D
                                                                                                                                                                                                                                                                                                                           244
                                                                                                                                                                                                                                                                                                                                                                                                                                          106
                                                                                                                                                                                                                                                         343
                                                                                                                                                                                                                                                                                                                                                                                              166
                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                  226
                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                       묽
                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                          8
                                                                                                                                                                                                                     문
   Enzyme;
```

```
AAP70348
ID AAP7
XX AAP7
XX AAP7
XX AAP7
XX DT 25-M
DT 07-A
XX Sequ
DE Sequ
DE pASN
XX Enzy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chrysanthemi added to a medium contg. Yeast extract and Ma glutamate. After centrifugation the pH was adjusted and the supernatent further centrifuged to remove any deposit. The extract was purified by a S-Sepharose Fast Flow column, having cation exchange gps. (comprising sulphonate gps.) to absorb asparaginase on the support. A degree of purificn. resulting in a specific activity >600U/mg was achieved after 6 purificn. steps with a yield of 40 percent. L-aspariginase can be produced of a very high quality from an amplified process which allows for increased automation. B. chrysanthemi is known to be effective against acute lymphoblastic leukaemia
                                    Sequence of pasn 32.
                                                                                                                                                      AAP70348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Goward
                                                                                             25-MAR-2003
07-AUG-1991
                                                                                                                                                                                            AAP70348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The protein sequence was obtd. from a 12 hr. seed culture of B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Purificn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1992-080071/10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-AUG-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-AUG-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-FEB-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           having cation exchange groups, pref. sulphonate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (PUBL-) PUBLIC HEALTH LAB S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                             247
                                                                                                                                                                                                                                                                                              298
                                                                                                                                                                                                                                                                                                                                307
                                                                                                                                                                                                                                                                                                                                                                         243
                                                                                                                                                                                                                                                                                                                                                                                                                                                    183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  al Similarity
156; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               327
                                                                                                                                                                                                                                                                                          LNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                          standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                           KALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHD 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GYLGVIIGNRIYYONRIDKLHTTRSVFDVRGLTSLFKVDILYGYODDPEYLYDAAIOHGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PATAISADGPMNLLEAVRVAGDKQSRGRGVMVVLNDRIGSARYITKTNASTLDTFKANEE 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PGTAMSADGMINIYNAVAVASNKDSRGKGVIVTMNDEIQSGRDVSKSINIKTEAFK-SAW 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENMTGDVVLKLSQRVNELLARDDVDGVVITHGTDTVEESAYFLHLTVKSDKPVVFVAAMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMR 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KLPNIVILATGGTIAGSAATGTQTTGYKAGALGVDTLINAVPXVKXXANVKGEQFSNMAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIAS
                                                                                                                                                                                                                                                                                                                                                                         KGIVYAGMGAGSVSVRGIAGMRKAMEKGVVVIRSTRTGNGIV-----PPDEELPGLVSDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of Erwinia L-asparaginase - by contact with a solid medium
                                                        þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fig 1; 17pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₹
                                                        protein with L-asparaginase
                                                                                               (first entry)
                                                                                                                 (revised)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90GB-00017002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90GB-00017002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       English.

; Score 749; DB 2;
; Pred. No. 1.2e-53;
63; Mismatches 105

                                                                                                                                                                                              348
                                                          E E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105;
                                                          activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                          in
                                                        PASN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                            30
                                                            얹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              122
                                                                                                                                                                                                                                                                                                                                                                                                                                                    242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N
```

cancer therapy; leukaemia therapy

```
RESULT 8
ABP98617
ID ABP9
XX
AC ABP9
XX
DT 30-M
XX
                                                                                                                                                                                                                                                                                                                                                                                          र्
                                                                                                                                    밁
                                                                                                                                                       S
                                                                                                                                                                            8
                                                                                                                                                                                                र्
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                         श्च
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                            When E.carotovora SCRI 193 contg. plasmid pASN 32 was cultured, the cell-tree culture broth contained 11.19 LA units/ml with specific activity 53.34 units/mg of protein. These figures compare with 10.87 LA units/ml and 14.97 units/mg of protein for the currently used prodn. strain E.chrysanthemi NCPPB 1066. (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                          Sequence 348 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 4, 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New recombinant plasmids coding for L-asparaginase - esp. from Erwinia carotovora, useful for treating malignancies and new transformed hosts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1987-051784/08
N-PSDB; AAN70557.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-AUG-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-AUG-1986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-FEB-1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP211639-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Brwinia
          30-MAY-2003
                              ABP98617;
                                                  ABP98617 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (PUBL-) PUBLIC HEALTH LAB SERVICE BOARD
                                                                                                    319
                                                                                                                      307
                                                                                                                                                              247
                                                                                                                                                                                  204
                                                                                                                                                                                                       187
                                                                                                                                                                                                                           144
                                                                                                                                                                                                                                              128
                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                           24
                                                                                                                                                                                                                                                                                                                              œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chrysanthemi.
                                                                                                            LNPQKARILAMVAMTKTQDSKBLQRIFWBY
                                                                                                                                                                                  GYLGVIIGNRIYYQNRIDKLHTTRSVFDVRGLTSLPKVDILYGYQDDPBYLYDAAIQHGV
                                                                                                                                                                                             GPLGMVVEGKSYMFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGA
                                                                                                                                                                                                                                           PGTAMSADGMLNLYNAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTBAFK-SAW 186
                                                                                                                                                                                                                                                                             ESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMR 127
                                                                                                                                                                                                                                                                                                                     KLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIAS
                                                                                                                                                                                                                                                                                                           KLPNIVILATGGTIAGSAATGTQTTGYKAGALGVDTLINAVPEVKKLANVKGEQFSNMAS
                                                                                                    LNPAHARILLMLALTRISOPKVIOEYPHTY
                                                                                                                                          KGIVYAGMGAGSVSVRGIAGMRKAMEKGVVVIRSTRTGNGIV-----PPDEELPGLVSDS
                                                                                                                                                             KALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHD
                                                                                                                                                                                                                           PATAISADGPMNLLEAVRVAGDKQSRGRGVMVVLNDRIGSARYITKTNASTLDTFKANEE
                                                                                                                                                                                                                                                                  ENMTGDVVLKLSQRVNELLARDDVDGVVITHGTDTVEESAYFLHLTVKSDKPVVFVAAMR
                                                                                                                                                                                                                                                                                                                                                44.6%; Score 749; DB 1; ilarity 47.3%; Pred. No. 1.3e-53; Conservative 63; Mismatches 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minton
          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85GB-00019753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    86EP-00305984.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .21
/label= signal
22. .348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                  protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gilbert HJ;
                                                  348
                                                  ₹
                                                                                                                       336
                                                                                                                                                                                                                                                                                                                                                  105;
                                                                                                                                                                                                                                                                                                                                                                    Length 348;
                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                              306
                                                                                                                                                                                                      246
                                                                                                                                                                                    263
                                                                                                                                                                                                                           203
                                                                                                                                                                                                                                                                  143
                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                                                                                                                                                                               67
RESULT 9
AAW98609
ID AAW9
XX
                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                  맑
                                                                          S
                                                                                                 밁
                                                                                                                    S
                                                                                                                                           밁
                                                                                                                                                           8
                                                                                                                                                                                  밁
                                                                                                                                                                                                     S
                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                         Query Match
Best Local Simi
Matches 156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New isolated Erwinia carotovora a L-asparaginase protein useful diseases of the blood.
          AAW98609
                                                                                                                                                                                                                                                                                                                                                  Sequence 348 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Asparaginase; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           erwinia chrysanthemi L-asparaginase protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bldarov MA,
Sidoruk KV,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 2; Page 9-10; 29pp; Russian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-AUG-2002; 2002WO-RU000405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO2003018742-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UCHR=)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        UCHR-)
                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2003-268418/26.
                                                                               307
                                                                                                                       247
                                                                                                                                           204
                                                                                                                                                              187
                                                                                                                                                                                    144
                                                                                                    264
                                                                                                                                                                                                       128
                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                              68
                                                                                                                                                                                                                                                                  24
                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ე
გე
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ີດີ
         standard;
                                                                        LNPQKARILAMVAMTKTQDSKELQRIFWEY
                                                             LNPAHARILLMLALTRTSDPKVIQEYFHTY
                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Zhgun AA, Gerva
Sveshnikova EV,
Sokolov NN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001RU-00123442.
2002RU-00108505.
         protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gervaziev YV,
         B
```

```
This sequence represents the complete form of an Erwinia chrysanthemi L-asparaginase. The invention relates to the isolation of the gene and protein for L-asparaginase from Erwinia carotovora and to the production of the mature version of the protein especially by expression of the DNA in a bacterial strain and has low affinity for L-glutamine. The protein is useful for treating malignant and non-malignant diseases of the blood (e.g. acute lymphoblastic leukemia)
                                                                                                                                                                                                                                                                 PGTAMSADGMINLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFK-SAW
                                                                                                                                                                                                                                                                                                                                                                                      ESITNDDLLKLASSVABLADSNDVDGIVITHGTDTLEBTAYFLNLVEKTDKPIVVVGSMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIAS
                                                                                                              GYLGVIIGNRIYYQNRIDKLHTTRSVFDVRGLTSLFKVDILYGYQDDFEYLYDAAIQHGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KLPNIVILATGGTIAGSAATGTQTTGYKAGALGVDTLINAVPEVKKLANVKGEQFSNMAS
KGIVYAGMGAGSVSVRGIAGMRKAMEKGVVVIRSTRTGNGIV
                                                    KALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHD
                                                                                                                                                                     GPLGMVVBGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGA
                                                                                                                                                                                                                                      PATAISADGPMNLLBAVRVAGDKQSRGRGVMVVLNDRIGSARYITKTNASTLDTFKANEB
                                                                                                                                                                                                                                                                                                                                                    ENMTGDVVLKLSQRVNELLARDDVDGVVITHGTDTVEESAYFLHLTVKSDKPVVFVAAMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   UCHREZHDENIE NI INST BIOMED KHIMII.
UCHREZHDENIE TSENTR BIOINZHENERIYA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44.6%; Score 749; DB 6; L
47.3%; Pred. No. 1.3e-53;
ative 63; Mismatches 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           blood; acute lymphoblastic leukemia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              liev YV, Aleksandrova SS,
Borisova AA, Omelnyuk NM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            L-asparaginase gene useful for treating malignant and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
      -PPDEELPGLVSDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Archakov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for producing nonmalignant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AI;
                                                                                                                                                                                                                                                                                                                                                                                                                 127
                                                                                                                                                                           246
                                                                                                                                                                                                                                         203
   318
                                                                                                                    263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               83
```

```
S
                                                                             밁
                                                                                           ঠ
                                                                                                            몽
                                                                                                                                                                                                                                                               망
                                                                                                                                ঠ
                                                                                                                                                   닭
                                                                                                                                                                S
                                                                                                                                                                                       밁
                                                                                                                                                                                                      S
                                                                                                                                                                                                                           Matches 148;
                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                              This sequence represents a Helicobacter pylori GHPO protein of the invention. The polypeptides can be used for preventing or treating Helicobacter infections, and gastroduodenal diseases associated with these infections, including acute, chronic, and atrophic gastritis, and peptic ulcer diseases, e.g. gastric and duodenal ulcers. They can also used for the production of antibodies. The products can also be used fo detection and diagnosis
                                                                                                                                                                                                                                                                                                                                                                      New isolated Helicobacter the diagnosis, prevention gastrointestinal diseases.
                                                                                                                                                                                                                                                              Sequence 364 AA;
                                                                                                                                                                                                                                                                                                                                                      Claim 8; Page 1227-1229; 2054pp; English
                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1998-542293/46.
N-PSDB; AAX14328.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Kleanthous H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-APR-1997;
24-JUN-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       08-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9843478-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Helicobacter pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GHPO protein;
peptic ulcer (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW98609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       (INMR ) MERIEU
(HUMA-) HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-JUL-1997;
                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pylori GHPO 187 protein
         333
                                           276
                                                            245
                                                                              216
                                                                                                186
                                                                                                                  156
                                                                                                                                   127
                                                                                                                                                                     67
                                                                                                                                                     96
                                                                                                                                                                                        37
                                                                                                                                                                                                          7
                                                                                                                                                                                                                                                                                                                                                                                                                                                       MERIEUX ORAVAX PASTEUR MERIEUX SERUMS HUMAN GENOME SCI INC.
                                                                             GAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVA
                                                                                                                  RNAASISADGALNIYNAVSVALNEKSANKGVLVVMDDNIFSAREVIKTHTTHTSTFKALN
                                                                                                                              RPGTAMSADGMINIYNAVAVASNKDSRGKGVLVTMNDEIOSGRDVSKSINIKTEAFKSA-
                                                                                                                                                    SQDMNEEVWFKLAKRAQELLDDSRIQGVVITHGTDTLEESAYFLNLVLRSTKPVVLVGAM
                                                                                                                                                                     SESITNDDLLKLASSVABLADSNDVDGIVITHGTDTLBETAYFLNLVBKTDKPIVVVGSM
                                                                                                                                                                                       QNLPTIALLATGGTIAGSGAS-ASLGSYKSGELGIKELLKAIPSLNRLARIQGEQISNIG
         DNLNPQKARVLLQLALTKTNNKEKIQEMFEEY
                         HDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                           HAKGVVIAGVGNGNVSAGFLKAMQEASQMGVVIVRSSRVNSGEI--TSGEIDDK-AFITS
                                                                                                                                                                                                         QKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIA
                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97US-00833457.
97US-00881227.
97US-00902615.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Helicobacter infection; gastroduodenal disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Al-Garawi A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98WO-US006371
                                                                                                                                                                                                                                    42.7%;
                                                                                                                                                                                                                                                                                                                                                                                polynucleotides - used to develop products and treatment of Helicobacter infections as
                                                                                                                                                                                                                          75;
                                                                                                                                                                                                                                    Score 717; DB 2;
Pred. No. 6.1e-51;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Miller
                                                                                                                                                                                                                           Mismatches 103; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                     ú
                                                                                                                                                                                                                                                                                                                                                                                                                                      Tomb
         364
                                                                                                                                                                                                                                                                                                                                                                                                                                     ٦
                                                                                                                                                                                                                                            Length 364;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Oomen
                                                                                                                                                                                                                                                                                                                                                                                                                                      RP,
                                                                                                                                                                                                                           6;
                                                                                                                                                                                                                                                                                         be used for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gastritis;
                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                   185
                                                                                                                                                                                                          66
                                           332
                                                                               275
                                                                                                244
                                                                                                                  215
                                                                                                                                                     155
                                                                                                                                                                     126
                                                                                                                                                                                       95
                                                                                                                                                                                                                                                                                                  þe
                                                                                                                                                                                                                                                     δ
                                                                                     S
                                                                                                                        S
문
           S
                                 문
                                                                     맑
                                                                                                         문
                                                                                                                                            문
                                                                                                                                                         5
                                                                                                                                                                              밁
                                                                                                                                                                                              Ś
```

```
Query Match
Best Local S
Matches 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention describes a new isolated nucleic acid encoding a Klebsiel pneumoniae polypeptide. Also described are: a recombinant expression vector comprising the nucleic acid, operably linked to a transcription regulatory element; and a cell comprising the recombinant expression vector. The nucleic acid is useful for preparing a vaccine composition against Klebsiella pneumoniae. This is the amino acid sequence of a Klebsiella pneumoniae polypeptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New nucleic acid encoding a Klebsiella pneumoniae polypeptide, useful for preparing a vaccine composition against Klebsiella pneumoniae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; SEQ ID NO 7901; 932pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Breton GL, Osborne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-AUG-2003.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US6610836-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Klebsiella pneumoniae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Recombinant expression vector;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Klebsiella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABO61384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABO61384 standard; protein; 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Klebsiella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GENO-) GENOME THERAPEUTICS CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2003-895346/82
304
                                            269
                                                                                       244
                                                                                                                                    209
                                                                                                                                                                                   185
                                                                                                                                                                                                                              149
                                                                                                                                                                                                                                                                          125
                                                                                                                                                                                                                                                                                                                       89
                                                                                                                                                                                                                                                                                                                                                                65
                                                                                                                                                                                                                                                                                                                                                                                                            29
                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACH94935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
AHDLNPQKARILAMVAMTKTQDSKELQRIFWEY
                                                                                       NGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVV
                                                                                                                                                                                                                                                     SMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTBAFKS 184
                                                                                                                                                                                                                                                                                                                       IGSENMTSDIILQLSKRVNALLARDDVDGVVITHGTDTLDETPYFLNLTVKSNKPVVFTA 148
                                                                                                                                                                                                                                                                                                                                                 IASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVG
                                                                                                                                                                                                                                                                                                                                                                                                          SETRLPHIVILATGGTIAGGAASNTQTTGYKAGAIGVQTLINAVPEMSKIAHVEGEQVAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                NQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPBLADLANVRGEQVMQ
                                               HHADGIIYAGTGAGSVSVRSAAGIKKAQQAGIVVVRASRTGSGVV-----PPDDSQPGLV
                                                                                                                                      PEEGYLGVVVGGKPQFETRVDKIHTLRSVFDVRQLKVLPKVVIIYGYQDDPEYMYDAAIA
                                                                                                                                                                                 -AWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQ
                                                                                                                                                                                                                                AMRPATAI SADGPMNLLEAVTVAADPDARGRGVMVVLNDRI GAARFVTKTNATSLDTFRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pneumoniae protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
Ķ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 200005-00489039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0117747P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42.3%; Score 711; DB 7;
45.0%; Pred. No. 1.9e-50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polypeptide seqid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transcription regulatory element; antibacterial; Vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Klebsiella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                   243
                                                                                                                                                                                                                                                                                                                                                                    124
                                                                                                                                                                                                                                                                                                                                                                                                               88
                                                                                            303
                                                                                                                                         268
                                                                                                                                                                                                                              208
```

```
RESULT 11
ADF05106
                                                                                                                                                                                                                                                                                                                                        र्
                                                                밁
                                                                                            र्
                                                                                                                                 문
                                                                                                                                                          ঠ
                                                                                                                                                                                                밁
                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                     Matchee 152,
                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                The invention relates to new Proteus mirabilis polypeptides and polymucleotides. The invention also relates to antibodies against the polypeptides, methods for producing the polypeptides, a method of generating vaccines for immunising an individual against P. mirabilis, a method for evaluating a compound for the ability to bind a P. mirabilis polypeptide and a method for screening test compounds for anti-bacterial activity. The polypeptides and polymucleotides are useful as molecular targets for diagnosing, preventing and treating pathological conditions resulting from bacterial infection, as reagents for diagnosis of bacterial diseases, as components of antibacterial vaccines, as targets for antibacterial drugs or as bio-control agents for plants. This sequence represents a Proteus mirabilis polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New Proteus mirabilis polypeptides and polynucleotides, useful as reagents for diagnosis of bacterial disease, as components of antibacterial vaccines, as targets for antibacterial drugs, or as
                                                                                                                                                                                                                                                                                                                                      Sequence 346 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; SEQ ID NO 5391; 870pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              biocontrol agents for plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB; ADF00934.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Breton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-APR-2000; 2000US-00543681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Proteus mirabilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Proteus mirabilis infection; bacterial infection; antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacterial polypeptide #1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADF05106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2003-895291/82.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12-AUG-2003.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12-FEB-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADF05106 standard,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GENO-) GENOME THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lmmunostimulant.
                                                                                                                                                                                                                                                                                      Local Similarity
 199
                                                                                                                                   81
                                                                                                                                                                   69
                                                                                                                                                                                                    22
                                                                                                                                                                                                                                     9
               PLGMVVEGKSYMERLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK 247
                                                                ATALGADGPINLYNAVVVASDKASENRGVLVTMNNSVISGKDVVKMNTTEVQAFQPINAG
                                                                                              GTAMSADGMINLYNAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTBAFKSA-WG
                                                                                                                                                                   SITNDDLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRP 128
AQGYVHDGKVHYYTAATPR-AEKVAFDVSKLTELPKVGIVYNYANASDLPAKAFIDNHFK
                                                                                                                                   DMNDQVWLKLANKIN--TDCDKTDGFVITHGTDTMBETAYFLDLTTACKKPVVMVGAMRP
                                                                                                                                                                                                                                  LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE 68
                                                                                                                                                                                                    LPNVTILATGGTIAGGGDS-ATSSSYTAGKLGIDTLINAVPEAKKVANLTGEQVVNIGSQ
                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0128706P
                                                                                                                                                                                                                                                                                   46.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein;
                                                                                                                                                                                                                                                                     185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             346
                                                                                                                                                                                                                                                                 Score 710.5; DB 7;
Pred. No. 2e-50;
8; Mismatches 114;
                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                   Length 346;
                                                                                                                                                                                                                                                                     ຽ
                                                                                                                                                                                                                                                                     Gaps
                                                                198
                                                                                                  187
                                                                                                                                                                                                    80
```

```
RESULT 12
ABM68938
AD ABM68
AX ABM68
AMM68
ABM68
ABM68
ABM68
ABM68
AX ABM68
AC ABM68
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    용 · 정
                                                                  CC protesis from Photoribabdus luminescens. The isolated sequences are considered sources of probes and primers for detecting the genome of P. luminescens considered and related species; to study polymorphisms; for gene analysis and for collection/amplification of the genes. Antibodies (Ab) raised against the polypeptides encoded by the genes are used for detection/identification of P. luminescens, e.g. in foods. The genes, proteins, Ab and cells that considered and the constant of P. luminescens, e.g. in foods. The genes, proteins, Ab and cells that condulate, regulate, induce or inhibit expression of the genes in plants, and carry a gene-containing vector are used to select compounds that compounds that considered to minals or microorganisms other than P. luminescens and are able to alter cresponse or sensitivity to toxins and antibiotics produced by P. continuescens. Cells transformed to express the genes are useful for crecombinant production of the proteins, particularly toxins and cells therapseutically (to treat microbial infection by bacteria or fungithat considered to P. luminescens encoded toxins or antibiotics) and as the supersticides. Other uses of the genes and the proteins are as virulence containing the genes and the protein are as virulence contains and contains or antibiotics) and as compessive to P. luminescens encoded toxins or antibiotics) and as compessioned to express the genes are useful that are assistive to P. luminescens encoded toxins or antibiotics) and as compessioned to the supersticides and the proteins are as virulence contains and the proteins are as virulence contains and the supersticularly plague and whoopsing cough). This contains are as of the genes and the supersticins are as virulence of the genes and the supersticins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Antibacterial; fungicide; insecticide; polymorphism; genetic analysis; detection; food; gene expression; plant; animal; microorganism; toxin; antibiotic; biopesticide; virulence factor; disease model; plague;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to the isolation of genes and their encoded proteins from Photorhabdus luminescens. The isolated sequences ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 2; SEQ ID NO 2035; 1205pp; French
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genomic sequence of Photorhabdus luminescens and encoded polypeptides, useful e.g. as therapeutic antimicrobials and agricultural pesticides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-148459/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-FEB-2001; 2001FR-00001659.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-FEB-2002; 2002WO-IB003040.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABM68938 standard; protein; 348 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Duchaud B, Taourit S, 
Buchrieser C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200294867-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Photorhabdus luminescens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABM68938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (INSP )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Photorhabdus luminescens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              248 ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INST PASTEUR.
CNRS CENT NAT RECH SCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GIVSAGVGNGNLYSDILNTLADGVKKGVVVVRSSRVPVGFTTQNGEVDDAKYGFIASERL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NPOKARVLLOLSLTETODPATIOENFEKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Glaser P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein sequence #2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Frangeul L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kunst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ψ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Danchin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            317
```

Sequence 348 AA;

40.8%;

Score 685.5;

B 6

Length 348;

```
ARESULT 13
ABP9616
ID ABP98
XX ABP98
XX ABP98
XX ABP4

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 44.: Matches 145; Conservative
This sequence represents the mature form of an Erwinia carotovora L-asparaginase. The invention relates to the isolation of the gene and protein for L-asparaginase and to the production of the mature version of the protein especially by expression of the DNA in a bacterial strain and has low affinity for L-glutamine. The protein is useful for treating malignant and non-malignant diseases of the blood (e.g. acute
                                                                                                                                                                                                                                  New isolated Erwinia carotovora L-asparaginase gene useful for producing a L-asparaginase protein useful for treating malignant and nonmalignant diseases of the blood.
                                                                                                                                                                                                                                                                                                                                      WPI; 2003-268418/26.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Eldarov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-AUG-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pectobacterium carotovorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mature Erwinia carotovora
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-OCT-2003
30-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABP98616;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABP98616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UCHR=)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23
                                                                                                                                                                                                                                                                                                                                                                                   n XX,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ე
გე
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AEGFVHNGKVNYY-ADAKPRANKAIFDVSKLDKLFKVGIVYNYANASDLPAKALLKDGYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NPOKARILAMVAMTKTODSKELORIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PLGMVVEGKSYWERLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STALGADGPLNLYNAVVVAGDTASAKRGVLMAMNDAVISGRTVVKMSTTEVQAFQPVNAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA-WG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NPOKARVILQLALTETRNPVKIHEMPVKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GIVSAGVGNGNMYKAIFDTLALAAKDGVVVVRSSRVPVGYVTQDAEVDDSKHGFVASERL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LPNITLLATGGTIAGGGKSAIQS-NYVAGRVAIDELVNAVPEIKNIANLKGEQVVSIGSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UCHREZHDENIE NI INST BIOMED KHIMII.
UCHREZHDENIE TSENTR BIOINZHENERIYA.
                                                                                                                                                                                                                                                                                                                                                                                      Zhgun AA, Gerva
Sveshnikova EV,
Sokolov NN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001RU-00123442.
2002RU-00108505.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2002WO-RU000405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gervaziev YV,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 blood,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L-asparaginase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 2.4e-48;
5; Mismatches 114;
                                                                                                                                                                                                                                                                                                                                                                                                                Borisova
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acute lymphoblastic leukemia.
                                                                                                                                                                                                                                                                                                                                                                                                           Aleksandrova SS,
AA, Omelnyuk NM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                Bogush VG;
Archakov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                AI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
```

```
RESULT 14
ABP98
ADP98
XX ABP98
XX 23-OC
DT 30-MA
XX ABPAX
XX ABPAX
XX ABPAX
XX Pecto
XX WO200
XX WO200
XX C1-AU
XX 22-AU
PR 22-AU
PR 22-AU
PR 104-AP
XX C1CHR
PA (UCHR
PA (UCHR)
PA 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ន្តដ្ឋន
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local (
                                                                                                                                                                                                                                       Eldarov
Sidoruk
                                                           New isolated Erwinia carotovora a L-asparaginase protein useful diseases of the blood.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Erwinia carotovora L-asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     lymphoblastic leukemia).
                                                                                                                                                                                                                                                                                                                                                                 22-AUG-2001;
04-APR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                               21-AUG-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO2003018742-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pectobacterium carotovorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-OCT-2003
30-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABP98615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABP98615
                                                                                                                                                                                                                                                                                                   UCHR=)
                                                                                                                                                  2003-268418/26.
DB; ABZ80801.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67
                                                                                                                                                                                                          n KV,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                   ე
გე
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GNGNPV-PDGPMNLYGAVKVAADKNSRGRGVLVVLNDRIGSARFISKTNAFTLDTFKAPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTBAFKS-A 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard; protein; 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SLSPAKSRILLMLALTKTTNPAVIQDYFHAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DINPOKARILAMVAMTKTQDSKBLQRIFWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGYLGVIIGDKIYYQTRLDKVHTTRSVFDVTNVDKLPKVDIIYGYQDDPEYMYDASIKHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SENMISDVILITLSKRVNELLARSDVDGVVITHGTDTLDESPYFLNLTVKSDKPVVFCDAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAVFLNLVEKTDKPIVVVGSM 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ENLPHIVILATGGTIAGFGSSQYANHWVKAGALGVETLIQAVPELKTLANIKGEQVASIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VKGIVYAGMGAGSVSKRGDAGIRKAESKGIVVVRSSRTGSGIVPPDAGQPG----
                                                                                                                                                                                                       Zhgun AA, Ge
Sveshnikova F
Sakolov NN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                   UCHREZHDENIE
UCHREZHDENIE
                                                                                                                                                                                                                                                                                                                                                                 2001RU-00123442.
2002RU-00108505.
                                                                                                                                                                                                                                                                                                                                                                                                                                 2002WO-RU000405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (revised)
(first en
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40.3%;
                                                                                                                                                                                                                                  Gervaziev YV,
7a EV, Borisova
                                                                                                                                                                                                                                                                                                NI INST I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Updated on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      blood;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 677.5; DB Pred. No. 1e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                             L-asparaginase gene useful for treating malignant and
                                                                                                                                                                                                                                                                                                   BIOINZHENERIYA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-OCT-2003 to
                                                                                                                                                                                                                                  Aleksandrova (
AA, Omelnyuk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lymphoblastic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                           SS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standardise
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      leukemia
                                                                                                                                                                                                                                       Bogush VG;
Archakov
                                                                                  for producing nonmalignant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -LVAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
```

Claim 1;

Page 23-24; 29pp;

Russian

ន្តន្តន្តន្តន្ត្

```
RESULT 15
ADO07179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This sequence represents an Brwinia carotovora L-asparaginase encoded by a nucleotide sequence in plasmid pECAR-LANS. The invention also includes a homogeneous preparation of a mature form of L-asparaginase produced by expression of the DNA in a bacterial strain and has low affinity for L-glutamine. The protein is useful for treating malignant and non-malignant diseases of the blood (e.g. acute lymphoblastic leukemia). (Updated on 2: -OCT-2003 to standardise OS field)
Preparing heat-treated product such as potato chips by providing material having carbohydrate, protein and water, treating raw mate with enzyme reacting on asparagine or glutamine and heat treating
                                                                                                                                                                                                                                                                                                                                                                                              22-APR-2004.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Asparaginase; enzyme; acrylamide; heat treatment; EC-3.5.1.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Aspergillus oryzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADO07179 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 348 AA,
                                                                                                            N-PSDB, ADO07178
                                                                                                                                  WPI, 2004-340772/31.
                                                                                                                                                                                  Budolfsen G,
                                                                                                                                                                                                                                                                                       11-OCT-2002, 2002DK-00001547
                                                                                                                                                                                                                                                                                                                                          10-OCT-2003; 2003WO-DK000684
                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO2004032648-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Aspergillus oryzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AD007179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7
                                                                                                                                                                                                                                         NOVOZYMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GNGNPV-PDGPMNLYGAVKVAADKNSRGRGVLVVLNDRIGSARPISKTNAFTLDTFKAPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RPGTAMSADGMLALYNAVAVASNKDSRGKGVLVTMADEIQSGRDVSKSINIKTEAPKS-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DINPOKARILAMVAMTKTODSKELORIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SENMISDVLLTLSKRVNELLARSDVDGVVITHGIDILDESPYFLNLTVKSDKPVVFCDAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSM 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENLPNIVILATGGTIAGFGSSQYANHWVKAGALGVETLIQAVPELKTLANIKGEQVASIG 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SLSPAKSRILLMLALTKTTNPAVIODYPHAY 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VKGIVYAGMGAGSVSKRGDAGIRKAESKGIVVVRSSRTGSGIVPPDAGQPG-----LVAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAH 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EGYLGVIIGDKIYYQTRLDKVHTTRSVFDVTNVDKLPKVDIIYGYQDDFEYMYDASIKHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                     Jensen MT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein; 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40.3%; Score 677.5; DB 6;
45.0%; Pred. No. 1.1e-47;
tive 59; Mismatches 116;
                                                                                                                                                                                     Heldt-Hansen HP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₹
                                                                                                                                                                                Stringer MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 348;
                                                                                                                                                                                  Lange
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7;
     ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  w
```

श् 밁 श् 밁 ঠ 문 र् 밁 გ 밁 र्

```
5
                                                                                                                                                 밁
                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #¥35655555555555555
                               δ
                                                                     밁
                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Simil
Matches 143; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acrylamide during heat treatment of raw material comprising carbohydrate, protein and water involves treatment of the raw material with an enzyme prior to heat treatment. The enzyme may be an asparaginase, including A. oryzae asparaginase (optionally truncated to residues 27-378, 30-378, 75-378 or 80-378), that is capable of reacting on asparagine or glutamine (optionally substituted). The method is useful for preparing a heat-treated product (claimed) such as potato products, potato chips, breakfast cereals, biscuits, roasted nuts, hot cakes, pancakes, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence is that of Aspergillus oryzae asparaginase. This enzyme shows optimal activity at pH 7 (at 37 degrees C) and 60 degrees C (pH 7.0) and is stable in the pH range from about 4.0 to 8.0. It has a molecular weight of 40-65 kDa (SDS-PAGE). N-terminal sequence showed 4 different terminals, at amino acid positions 27, 30, 75 and 80 of the present sequence. A claimed method of reducing the formation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 378 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
341
                                   302
                                                                         286
                                                                                                             243
                                                                                                                                                   228
                                                                                                                                                                                         185
                                                                                                                                                                                                                               168
                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                   13
                                                                                                                                                                                                                                                                                                                                                                                                     VVAHDLNPQKARILAMVAMTKTQDSKELQRIF 333
                                                                                                                                                                                                                             AMRESTAISADGELNILLQSVTVAASEKARDRGALIVMNDRIVSAFYASKTNANTVDTFKA
                                                                                                                                                                                                                                                                                                       SPDITSDILLRLSKQINEVV-CNDPTMAGAVVTHGTDTLEESAFFLDATVNCRKFVVIVG
                                                                                                                                                                                                                                                                                                                                       SESITNDDLLKLASSVABLADSND--VDGIVITHGTDTLEBTAYFLNLVBKTDKPIVVVG 124
                                                                                                                                                                                                                                                                                                                                                                                   LPNVTIFATGGTI--AGSSADNTATTGYKAGAVGIQTLIDAVPEMLNVANVAGVQVTNVG 108
IASGYĹŃPAKSŔVĽLGĽĽLAQGKSIEEMRAVF
                                                                         DNGAKGIVIAGSGSGSVSTPFSAAMEDITTKHNIPIVASTRTGNGEVPSSAE----SSQ
                                                                                                           QNGAKALIHAGTGNGSVSSRVVPALQEL-RKNGVQIIRSSRQQGGFVLRNAEQPDDKNDW 301
                                                                                                                                                   IEMGNIGEVVSNKPYFFYPPVK-PTGKTEVDIRNITSIPRVDILYSYEDMHNDTLYSAI-
                                                                                                                                                                     -AWGPLGMVVEGKSYMFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNV-TDTAYKALA
                                                                                                                                                                                                                                                                 SMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35.9%;
43.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       46pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 602.5; DB 8
Pred. No. 2.1e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                           340
                                                                                                                                                                                                                               227
                                                                                                                                                                                                                                                                                                           167
                                                                                                                                                                                                                                                                     184
```

Search completed: March time : 171 secs 18, 2005, 21:32:35

Lhis Page Blank (uspto)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
   710.5
361.5
361.5
361.5
356
356
356
331.5
101.1
101.1
101.1
101.5
1160.5
1160.5
1160.5
1160.5
1160.5
1160.5
1160.5
1160.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/FCTUS_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/backfIles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           513545 seqs, 74649064 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-842-628-2
1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     March 18, 2005, 21:25:54 ; Search time 43 Seconds
(without alignments)
583.304 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KEVENQQKLANVVILATGGT......MVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100
                                                                                                                                                                                                                     GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapext 0.5
 PCT-US92-10421-2
US-08-050-482A-2
US-09-252-991A-22364
US-09-252-991A-22364
US-09-328-352-6462
US-09-489-039A-7901
US-09-489-039A-7901
US-09-134-000C-4613
US-09-134-001C-3234
US-09-107-433-3234
US-09-107-433-3234
US-09-107-532A-4947
US-09-488-039A-7667
US-09-488-039A-7667
US-09-488-039A-7667
US-09-488-039A-7667
US-09-19-12
US-09-19-12
US-09-19-12
US-09-19-12
US-09-19-12
US-09-19-12
US-09-19-12
US-09-19-12
US-09-19-51-12
US-09-19-51-51-12
US-09-19-51-51-12
US-09-19-51-51-12
US-09-19-51-51-12
US-09-19-51-51-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
sequence 2, Appli
sequence 6462, Ap
Sequence 6462, Ap
Sequence 1, Appli
sequence 7901, Ap
sequence 5391, Ap
sequence 5391, Ap
sequence 3314, Ap
sequence 3234, Ap
sequence 3234, Ap
sequence 4947, Ap
sequence 4947, Ap
sequence 17491, A
sequence 17, Appl
sequence 12, Appl
sequence 12, Appl
sequence 12, Appl
sequence 2, Appli
sequence 4, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                2, Appli
```

;	Д,	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
į	126	126	126	126	126	126	143	145.5	145.5	145.5	145.5	145.5	145.5	145.5	145.5	145.5	145.5	145.5
į	7.5	7.5	7.5	7.5	7.5	7.5	8.5	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
	395	365	365	365	365	365	339	565	565	565	565	565	565	565	565	565	565	363
	4	4	w	w	W	ω	4	4	4	4.	4	w	w	w	ω	w	ω	4
	US-09-634-858A-7	US-09-634-858A-6	US-09-635-705-7	US-09-635-705-6	US-09-195-666A-7	US-09-195-666A-6	US-09-902-540-15220	US-08-869-927C-49	US-08-869-927C-5	US-09-634-858A-49	US-09-634-858A-5	US-09-635-705-49	US-09-635-705-5	US-09-309-592-6	US-09-195-666A-49	US-09-195-666A-5	US-09-008-481A-6	US-08-869-927C-4
	Seguence 7, Appli	Sequence 6, Appli	Sequence 7, Appli	Sequence 6, Appli	Sequence 7, Appli	Sequence 6, Appli	Sequence 15220, A	Sequence 49, Appl	Sequence 5, Appli	Sequence 49, Appl	Sequence 5, Appli	Sequence 49, Appl	Sequence 5, Appli	Sequence 6, Appli	Sequence 49, Appl	Sequence 5, Appli	Sequence 6, Appli	Sequence 4, Appli

## ALIGNMENTS

```
RESULT 1
PCT-US92-10421-2
                                                                                 PCT-US92-10421-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2, Applicati
GENERAL INFORMATION:
APPLICANT: Robert
Query Match
Best Local Similarity
Matches 336; Conserv
                                                                                                                                                                                                                                              TELEFAX: 202-508-9299
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: MacAllister, APPLICANT: Sethuraman, Natarajan
APPLICANT: Freeman, Abbie G
APPLICANT: Freeman, Abbie G
TITLE OF INVENTION: GENETICALLY ENGINEERED GLUTAMINASE AND
TITLE OF INVENTION: ITS USE IN ANTIVIRAL AND ANTICANCER THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
COMPUTER: PC COMPATION
SOPTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION UMBER: PCT/US92/10421
FILING DATE: 19921204
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: DB P4140003.8
APPLICATED NUMBER: DB P4140003.8
FILING DATE: 04-DEC-1991
ATTORNEY/AGENT INFORMATION:
NAME: Kagan, Sarah A
REGISTRATION NUMBER: 32,141
                                                                                                  MOLECULE TYPE:
HYPOTHETICAL:
ANTI-SENSE: NO
                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 336 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: 00.
TELECOMMUNICATION INFORMATION: 202-508-9100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: 1001 G Street CITY: Washington, D.C. COUNTRY: U.S.A.
                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Banner, Birch, STREET: 1001 G Street N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application PC/TUS9210421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MATILUM
Roberts, Joseph
MacAllister, Thomas W
                                                                                                                                                                linear
                                                                                                                          protein
YES
                 100.0%; Score 1680; DB 5; 100.0%; Pred. No. 1.9e-149;
                                                                                                                                                                                                                                                                                                                                 00100.41200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  McKie and Beckett
                                      Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   THERAPY
```

Conservative

0

Mismatches

1.9e-149;

Indels

0

Gaps

<u>.</u>

Indels

۲,

Gaps

60

300 299 240 240 180 180

```
밁
                                        US-08-050-482A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
US-08-050-482A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/08050482A
Patent No. 6312939
GENERAL INFORMATION:
APPLICANT: ROBERTS, JOSEPH
Query Match
                                                                                                                                                      INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                      ZIP: 20007-5109

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IMM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOPTWARE: Patentin Release #1.0, Vers

SOPTWARE: PATENTION DATA:

APPLICATION NUMBER: US/08/050,482A

FILING DATB: 25-Apr-1995

CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US92/10421
FILING DATE: 04-DEC-1992
ATTORNEY/AGENT INFORMATION:
NAME: Bent, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 023032/0106
TELECOMMUNICATION INFORMATION:
                                                        TOPOLOGY: linear MOLECULE TYPE: protein SEQUENCE DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 22
CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FREEMAN, Abbie G.
TITLE OF INVENTION: GENETICALLY ENGINEERED GLUTAMINASE AND
ITS USE IN ANTIVIRAL AND ANTICANCER THERAPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LAQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APKSAMGPLGMVVEGKSYMFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QVMQIASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AFKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QVMQIASESITNDDLLKLASSVABLADSNDVDGIVITHGTDTLBETAYFLNLVEKTDKPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEVENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Washington STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEB: FOLEY & LARDNER STREET: 3000 K Street, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WVVAHDLNPQKAR I LAMVAMTKTQDSKELQR I FWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKND
                                                                                                                    TYPE: amino acid
                                                                                                                                                                                             TELEPHONE: (202) 672-5300
TELEFAX: (202) 672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MACALLISTER, Thomas W. SETHURAMAN, Natarajan
  86
                                                            SEQ ID NO:
Score 1646.5;
                                                            ν.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Version #1.30
  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              336
ω
•
Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                              á
                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
    밁
                                  δ
                                                                              밁
                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-252-991A-22364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-252-991A-22364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: MATC J. Rubenfield et al.

APPLICANT: MATC J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS

TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/09/252,991A.

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR FILING DATE: 1998-02-18

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 22364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 22364, Application Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                              Matches 284;
                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 331; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 393
                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
      297
                                      241
                                                                              237
                                                                                                                                                           177
                                                                                                                                                                                               121
                                                                                                                                                                                                                                     117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                         61 QVMQIASESITNDDLLKLASSVABLADSNDVDGIVITHGTDTLBETAYFLNLVEKTDKPI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                57 KEVAPQQKLSNVVILATGGTIAGAGASAANSATYTAAKVPVDQLLASVPQLKDIANVRGE
                                                                                                                                                                               VVVGSMRPGTAMSADGMLNLYNAVAVAASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AFKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QVMQIASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLBETAYFLNLVEKTDKPI 120
                            LAQNGAKALIHAGTGNGSVSSRVVÞALQELRKNGVQIIRSSR-QQGGFVLRNAEQPDDKN
                                                                                                                                                                                                                                     QVFQIASESFINENLLELGKTVAKLADSDDVDGIVITHGTDTLEETAYFLTLVEHTEKPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTE
                                                                                                    AFKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA 240
                                                                                                                                                                                                                                                                                                                                    KEVENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DWVVAHDLNPQKAR I LAMVAMTKTQDSKELQR I FWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSR-QQGGFVLRNAEQPDDKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VVVGSMRPGTAMSADGMLNLYNAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DWVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LAQNGAKAL IHAGTGNGSVSSRVVPALQELRKNGVQI IRSSHVNQGGFVLRNAEQPDDKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QVMQIASESITNDDLLKLGKRVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEVENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEVENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE
                                                                                                                                                         VVVGSMRPGTAMSADGMLNLYNAVAVAGDKSARGKGVLITMNDBILSGRDASKMVNIKTB
      LAQAGAKA I I HAGTGNGSVPARVVPTLQELRKQGVQI I RSSHVNAGGFVLRNAEQPDDKN
                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                            85.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/09252991A
                                                                                                                                                                                                                                                                                                                                                                                          22; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                            Score 1432.5; DB 4;
Pred. No. 4.3e-126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 2.6e-146;
0; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                              30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            336
```

Indels

1;

Gaps

116

180

176

236

356 299 296 Length 393;

```
RESULT 5
US-07-867-105B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       श्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  श्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   / ORGANISM: Acinetobacter baumannii US-09-328-352-6462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 4
US-09-328-352-6462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: GATY L. Breton et al.
APPLICANT: GATY L. Breton et al.
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 8252
SEQ ID NO 6462
LENGTH: 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 6462, Application Patent No. 6562958
                                                                                                                                                                                                                                                                                                 sequence 1, Application US/07867105B Patent No. 5310670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: GOWARD; Christopher R.
TITLE OP INVENTION: Improved Meth
TITLE OP INVENTION: Purification
TITLE OP INVENTION: L-Asparaginas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILE REFERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
COUNTRY: USA
ZIP: NY 10176-0024
COMPUTER READABLE PORM:
MEDIUM TYPB: 5.25 inch diskette
                                                                                                                                                                     NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                            CITY: New York
STATE: New York
                                                                                                               ADDRESSEE: Kirschstein, Ottinger, Israel ADDRESSEE: & Schiffmiller, P.C. STREET: 551 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                      346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                         308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               249 LIHAGTGNGSVSSRVVPALQELR-KNGVQIIRSSRQQGGFVLRNAKQPDDKNDWVVAHDL 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11
                                                                                                                                                                                                                                                                                                                                                                                                                                     NPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DWVVAHDLNPQKARILAMVAMIKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MVVEGKSYWFRLPAKRHTVNSEFDIKQI--SSLPQVDIAYSYGNVTDTAYKALAQNGAKA 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRPGT 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TLVEGKPYWFRQSVKRHTNASBFNI ENI KGDALPTVQI VYGSDSMLPDAYEAYAKAGAKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALSADGPLNLYSAVALAASDDAKNKGVMVLMNDSIPAARDVTKGINIHTNAFVSQWGALG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TDKBLLQIARQVNELVKKPTVNGVVITHGTDTLEETAFFLNLVVHTDKFIVLVGSMRPST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NVVVVATGGTIAGAGASSANSATYTAAKVPVDALINAVPQIQDLANVSGIQALQVASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IIHAGTGNGSVAKYIVPTLQNLHDKNGIQIIRSSRVPQGFVLRDAEQPDSKYGWVAAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63.3%; Score 1063.5; DB 4; 64.7%; Pred. No. 1.9e-91; tive 45; Mismatches 68;
                                                                                                                                                                                                         L-Asparaginase
                                                                                                                                                                                                                            Improved Method
Purification of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/09328352
                                                                                                                                                                                                                              for the
Brwinia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           u
•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; DESCRIPTION: chr
; HYPOTHETICAL: No
; ORIGINAL SOURCE;
; ORGANISM: Erwini
US-07-867-105B-1
                                                                                                                                                    RESULT 6
US-09-489-039A-7901
                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           먉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                            GENERAL INFORMATION: APPLICANT: Gary Br
                                                                                                               Sequence 7901, Application US/09489039A Patent No. 6610836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                   APPLICANT: GATY Breton et. al TITLB OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: 2709.2004001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 327 a.a.
     CURRENT APPLICATION NUMBER: US/09/489,039A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: GB 9017002.8 FILING DATE: 02-AUG-90 ATTORNEY/AGENT INFORMATION: NAME: David B. Kirschstein REGISTRATION NUMBER: 17244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: Polypeptide
DESCRIPTION: The amino acid sequence of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    y Match 44.6%; Score 749; DB 1; I
Local Similarity 47.3%; Pred. No. 5.4e-62;
hes 156; Conservative 63; Mismatches 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM:
SOFTWARE: Nil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: NAME: Martin W. Schiffmiller REGISTRATION NUMBER: 30421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Alan Israel REGISTRATION NUMBER: 27564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 19920625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                   307
                                                                                                                                                                                                                                                                                                        243
                                                                                                                                                                                                                                                                                                                                             247
                                                                                                                                                                                                                                                                                                                                                                                   183
                                                                                                                                                                                                                                                                                                                                                                                                                      187
                                                                                                                                                                                                                                                                                                                                                                                                                                                           123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                œ
                                                                                                                                                                                                                              LNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                   GYLGVIIGNRIYYONRIDKLHTTRSVFDVRGLTSLPKVDILYGYODDPEYLYDAAIOHGV
                                                                                                                                                                                                                                                                                                                                                                                                    GPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PATAISADGPMNLLEAVRVAGDKQSRGVMVVLNDRIGSARYITKTNASTLDTFKANEE 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PGTAMSADGMINIYNAVAVASNKDSRGKGVIVTMNDBIQSGRDVSKSINIKTEAFK-SAW 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENMTGDVVLKLSQRVNELLARDDVDGVVITHGTDTVEESAYFLHLITVKSDKPVVFVAAMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMR 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIAS
                                                                                                                                                                                                                                                                                                        KGIVYAGMGAGSVSVRGIAGMRKAMEKGVVVVIRSTRTGNGIV-----PPDEELPGLVSDS
                                                                                                                                                                                                                                                                                                                                             KALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHD 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KLPNIVILATGGTIAGSAATGTQTTGYKAGALGVDTLINAVPEVKKLANVKGEQFSNMAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Olivetti (IBM Compatible)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Brwinia chrysanthemi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chrysanthemi L-asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MS DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/07/867,105B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Erwinia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                              TO KLEBSIBLLA
```

242

122

62 67

```
CURRENT FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: US 60/117,747
PRIOR PILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 14342
SEQ ID NO 7901
LENGTH: 356
TYPE: PRT
ORGANISM: Klebsiella pneumoniae
                 ঠ
                                                        뮹
                                                                                   S
                                                                                                                              밁
                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                    US-09-543-681A-5391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 7
US-09-543-681A-5391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-489-039A-7901
                                                                                                                                                                                                                                                                                                  SEQ ID NO 5391
LENGTH: 346
TYPE: PRT
ORGANISM: Proteus mirabilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 5391, Application Patent No. 6605709 GENERAL INFORMATION:
                                                                                                                                                                                                          Matches 152;
                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABII
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
EILE REPERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT FILING DATE: 2000-04-05
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR PILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 8344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                            Match 42.3%;
Local Similarity 46.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match 42.3%;
Local Similarity 45.0%;
                       129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               125
                                                          81
                                                                                     69 SITNDDLLKLASSVABLADSNDVDGIVITHGTDTLBETAYFLNLVEKTDKPIVVVGSMRP 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29
                                                                                                                                                                   9 LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5 NQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQ 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GARY BRETON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTBAFKS
                   GTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA-WG
                                                        DMNDQVWLKLANKIN--TDCDKTDGFVITHGTDTMEETAYFLDLTTACKKPVVMVGAMRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADSLNPAKARILLMTALTQTKDPQLIQQYPHTY 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HHADGIIYAGTGAGSVSVRSAAGIKKAQQAGIVVVRASRTGSGVV-----PPDDSQPGLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVV 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEEGYLGVVVGGKPQFETRVDKIHTLRSVFDVRQLKVLFKVVIIYGYQDDPEYMYDAAIA 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -AWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQ 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AMRPATAISADGPMNLLEAVTVAADPDARGRGVMVVLNDRIGAARFVTKTNATSLDTFRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SETRLPHIVILATGGTIAGSAASNTQTTGYKAGAIGVQTLINAVPEMSKIAHVEGEQVAN
                                                                                                                                LPNVTILATGGTIAGGGDS-ATSSSYTAGKLGIDTLINAVPEAKKVANLTGEQVVNIGSQ 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IGSENMISDIILQLSKRVNALLARDDVDGVVITHGTDTLDETPYFLNLTVKSNKPVVFTA 148
Conservative
                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/09543681A
                                                                                                                                                                                                        58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68;
                                                                                                                                                                                                                            Score 710.5; DB 4; Pred. No. 2.4e-58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 711; DB 4;
Pred. No. 2.3e-58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 109;
                                                                                                                                                                                                        Mismatches 114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 356;
                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                             Length 346;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                        υ
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               184
                                                          138
                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88
                                                                                                             RESULT 9
US-09-710-279-1912
```

```
8
                                                                                   밁
                                                                                                                        S
                                                                                                                                                                 문
                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TYPE: PRT ; ORGANISM: Enterococcus faecalis US-09-134-000C-4613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 8
US-09-134-000C-4613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 6812
SOFTWARE: PatentIn version 3.1
SEQ ID NO 4613
LENGTH: 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: LYND DOUCETTE-Stamm et al APPLICANT: LYND DOUCETTE STAMM ANIO ACID SEQUENCES RELATING TO TITLE OF INVENTION: ENTERCOCCUS FAECALIS FOR DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: 032796-032 CURRENT APPLICATION NUMBER: US/09/134,000C CURRENT FILING DATE: 1998-08-13 PRIOR APPLICATION NUMBER: US 60/055,778 PRIOR APPLICATION NUMBER: US 60/055,778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                      170
                                                                                                                                                                                                           177
                                                                                                                                                                                                                                                      110
                                                                                                                                                                                                                                                                                   117 DKPIVVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSIN 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
  280
                                                                                                                          236 TAYKALAQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQP 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 139 ATALGADGPLNLYNAVVVASDKASENRGVLVTMNNSVISGKDVVKMNTTEVQAFQPINAG
                                                                                                                                                                                                                                                                                                                                                                               57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4613,
                                                                                                                                                                                                                                                                                                                                       53 --VEDIFNIPSPHMTLERMFQLKERI-QKAYSEPIDGVVITHGTDTLEETAYFLDITLEK 109
                                                                                                                                                                                                                                                                                                                                                                                                                        w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6617156
                                                                                                                                                                                                                                                                                                                                                             VRGEQVMQIASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKT 116
                                                                                                                                                                                                                                                      KIPIVLTGAMRSSNEIGSDGLYNPISAIWTACSDESYDKGVLVVMNDEIHTARYVTKTHT 169
                                                                                                                                                                                                                                                                                                                                                                                                                        QRRKQMKTILVLHTGGTISMSKVAGGSVAPNEKNPLMEQEA-----LFSGKVHLV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENQQKLANVVILATGGTIA----GAGASAA----NSATYQAAKVGVDKLIAGVPELADLAN
                                       DD-----KNDWVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                           IKTEAPKS-AWGPLGMVVEGKSYWPRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTD 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NPOKARILAMVAMTKTODSKELORIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GIVSAGVGNGNLYSDILNTLADGVKKGVVVVRSSRVPVGFTTQNGEVDDAKYGFIASERL
YDYAGGGVGLKKMGVVFARGLNGPKARIRLIVGLNSEKNPAELKE-FLEH
                                                                                                                                                                      TNVATFRTPTFGPIGTIAKERAFF----AKEVLPQEVCDVSSVKG--NVHVVKAYAGMGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NPOKARVLLQLSLTETQDPATIQENFEKY 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALIHAGTGNGSVSSRVVPALQELRXNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AQGYVHDGKVHYYTAATPR-AEKVAFDVSKLTELPKVGIVYNYANASDLPAKAFIDNHFK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/09134000C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22.2%; Score 372.5; DB 4; 30.0%; Pred. No. 1.3e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                          52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               317
```

GENERAL INFORMATION:
APPLICANT: KIMMERLY, WILLIAM JOHN
TITLE OF INVENTION: STAPHYLOCOCCUS EPIDERMIDIS NUCLEIC ACIDS AND PROTEINS
FILE REFERENCE: PU3480US

Sequence 1912, Application US/09710279 Patent No. 6703492

```
CURRENT APPLICATION NUMBER: US/09/710,279
CURRENT FILING DATE: 2000-11-09
PRIOR APPLICATION NUMBER: 60/164,258
PRIOR FILING DATE: 1999-11-09
NUMBER OF SEQ ID NOS: 4472
SOFTWARE: PACENTIN Vex. 2.1
SEQ ID NO 1912
LENGTH: 322
TYPE: PRT
   밁
                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-134-001C-3234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-710-279-1912
                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Lynn Doucette-Stamm et al
APPLICANT: Lynn Doucette-Stamm et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
TITLE OF INVENTION: BPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC-007
                                                                                                                                                                     PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR FILING DATE: 1997-11-08
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
NUMBER OF SEQ ID NOS: 5674
SEQ ID NO 3234
LENGTH: 326
                                                                                                                                                                                                                                                                                                                                                                                            Sequence 3234, Application Patent No. 6380370
                                                               Matches
                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                           TYPE: PRT
ORGANISM: Staphylococcus epidermidis
-09-134-001C-3234
                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/134,001C CURRENT FILING DATE: 1998-08-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Artificial Sequence FEATURE:
                                                                              LOCAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                69
   G
                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9 LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE 68
                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SNEIGSDGLYNFISAIRVASSSEANHKGVMVVFNDEIHTARNVTKTHTSNINTFQSFNQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA-WG
MKRLLIIHTGGTISMSQDQTNKVITNEENPISQHQNI-----ISQYAEVDEINLLNIPSP
                          LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FSNGLNGPKARLKLLVGLSQDMTQNQLERYFEE 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -AHDLNPOKARILAMVAMTKTQDSKELQRIFWE 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GIVIBALGQGNLPKSCLNGLQQCLKKNIPLVLVSRSFNGIVSPVYAYEGGGADLKNNGVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALIHAGTGNGSVSSRVVPALQBLRKNGVQIIRSSRQQGGFV----LRNABQPDDKNDWVV 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PLGVLTKNRVQFYHHP-YRQTTYQYIDVNL----RVPLVKAYMGMEDDVLSFYSQQHVD 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HMTISNVVRLRDBIITYSKENIYDGFVITHGTDTLBBTAFLIDLLIDIQBPIVITGAMRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SITNDDLLKLASSVABLADSNDVDGIVITHGTDTLBETAYFLNLVEKTDKFIVVVGSMRP 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MKRLLIIHTGGTISMSQDQTNKVITNBENPISQHQNI----ISQYAEVDBINLLNIPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLGMVVEGKSYWERLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                            21.5%; Score 361.5; DB 3; ilarity 27.6%; Pred. No. 1.4e-25; Conservative 73; Mismatches 151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description of Artificial Sequence: amino acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21.5%; Score 361.5; DB 4; 27.6%; Pred. No. 1.4e-25; ative 73; Mismatches 151;
                                                                                                                                                                                                                                                                                                                                                                                                              US/09134001C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                          Length 326;
                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                              17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17;
                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                 STAPHYLOCOCCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                115
 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                      S
                                                            밁
                                                                                        Ś
                                                                                                                           밁
                                                                                                                                                     8
                                                                                                                                                                                       밁
                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-583-110-3586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-583-110-3586
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 3586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No. 669970
                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US 60/051,553
PRIOR FILING DATE: 1997-07-02
NUMBER OF SEQ ID NOS: 5322
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Streptococcus pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION:
                               298
                                                            230
                                                                                                                            176
                                                                                                                                                        190
                                                                                                                                                                                         116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    129
                                                                                                                                                                                                                                                                                                                                                                                 102;
                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FSNGLNGPKARLKLLVGLSQDMTQNQLERYFEE 326
                               KNDWVVAHDLNPQKARILAMVAM 320
                                                                                             IHAGTGNGSVSSRVVPALQELRKNGVQIIRSSR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -AHDLNPQKARILAMVAMTKTQDSKELQRIFWE
 --GVFFVKELNAQKARLKLLIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/09583110
                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                липык: US 60/085,131
1998-05-12
```

```
APPLICANT: Lynn Doucette-Stamm et al.

TITLE OF INVENTION: Nucleic Acid and Amino Acid Sequences Relating to Streptococcus
TITLE OF INVENTION: Pneumoniae for Diagnostics and Therapeutics
FILE REFERENCE: PATHO0-07A
CURRENT APPLICATION NUMBER: US/09/583,110
CURRENT FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/107,433
PRIOR PILING DATE: 1999-06-30
PRIOR APPLICATION NUMBER: US 60/085,131
PRIOR PILING DATE: 1999-05-12
                                                                                                                                                                                                                                                             58 KPKHMLVLYQKIKEEAD--NYDGVVITHGTDTLEETAYFLDTMEVPHMPIVLTGAMRSSN 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SITNDDLLKLASSVABLADSNDVDGIVITHGTDTLBETAYFLNLVEKTDKPIVVVGSMRP 128
                                                                                                                                                                     GMVVEGKSYWFRLPAKRHTVNSBFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAKAL
                                                                                                                                                                                                                             BLGSDGVYNYLSALRVASDDRAADKGVLVVMNDEIHAAKYVTKTHTTNVNTFQTPTHGPL
                                                                                                                                                                                                                                                                                                                                                                          TNDDLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRPGT 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ILVLHTGGTISMQADASGAVVTSSDNPMNHVSNPLEGI-----QVHALDFFNLPSPHI 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GIVIEALGQGNLPKSCLNGLQQCLKKNIPLVLVSRSFNGIVSPVYAYEGGGADLKNNGVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFV----LRNAEQPDDKNDWVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HMTISNVVRLRDBIITYSKENIYDGFVITHGTDTLEETAFLIDLLIDIQEPIVITGAMRS
                                                                                                                GLIMKQEILYFKTAEPR----VRFDLDHIQGL--VPIISAYAGMTDELIDMLDLEHLDGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SNEIGSDGLYNFISAIRVASSSEANHKGVMVVFNDEIHTARNVTKTHTSNINTFQSPNQG
IIQAFGAGNIPKETAQKLESLLQKGIPVALVSRCFNGIAEPVYAYQGGGVQLQKA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLGVLTKNRVQFYHHP-YRQTTYQYIDVNL----RVPLVKAYMGMEDDVLSFYSQQHVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21.2%; Score 356; DB 4; Length 32 31.6%; Pred. No. 4.4e-25; tive 51; Mismatches 134; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 320;
                                                          ----QQGGFVLRNAEQPDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      119
                                                          297
                                                                                                                                                                     249
                                                                                                                                                                                                                                175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              303
  284
                                                                                                                  229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
```

```
S
                                                                                                                                                                       밁
                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc feature
LOCATION: (B) LOCATION 1...321
SEQUENCE DESCRIPTION: SEQ ID NO: 3394:
US-09-107-433-3394
                                                                                   片
                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
US-09-107-433-3394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3394, Applicate Patent No. 6800744
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 3394:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/107,433
FILING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear MOLECULE TYPE: protein HYPOTHETICAL: YES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: LYMM A Doucette-Stamm and David Bush
TITLE OF INVENTION: NUCLEIC ACID AMIO ACID
SEQUENCES RELATING TO STREPTOCOCCUS PNEUMONIAE
THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 5206
                                                                                                                                                                                                                                                                                                                                                    102;
                                                                                   117 ELGSDGVYNYLSALRVASDDRAADKGVLVVMNDEIHAAKYVTKTHTTNVNTFQTPTHGPL 176
                                                                                                                   131 AMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKS-AWGPL 189
                                                                                                                                                                          59 KPKHMLVLYQKIKEBAD--NYDGVVITHGTDTLEETAYFLDTMEVPHMPIVLTGAMRSSN 116
                                                                                                                                                                                                     71 TNDDLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRPGT 130
                                                                                                                                                                                                                                                                                                         12 VVILATGGTIA-GAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASESI 70
                                                                                                                                                                                                                                                                6 ILVLHTGGTISMQADASGAVVTSSDNPMNHVSNPLEGI-----QVHALDFFNLPSPHI 58
                                        GMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAKAL 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 60/ 085131
FILING DATE: May 12, 1998
APPLICATION NUMBER: 60/051553
FILING DATE: July 2, 1997
GLIMKQEILYFKTAEPR----VRFDLDHIQGL--VPIISAYAGMTDELIDMLDLEHLDGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: <Unknown>
OPERATING SYSTEM: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 321 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Waltham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Streptococcus pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/09107433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (781)893-8277
                                                                                                                                                                                                                                                                                                                                                                        21.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (781)893-5007
                                                                                                                                                                                                                                                                                                                                                  51;
                                                                                                                                                                                                                                                                                                                                                                        Score 356; DB 4;
Pred. No. 4.4e-25;
                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                    134;
                                                                                                                                                                                                                                                                                                                                                                                          Length 321;
                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                    36;
                                                                                                                                                                                                                                                                                                                                                    Gaps
230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DIAGNO
```

```
NAME/KEY: misc feature

LOCATION: (B) LOCATION 1...334

SEQUENCE DESCRIPTION: SEQ ID NO: 494
US-09-107-532A-4947
                              Ś
                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
US-09-107-532A-4947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
밁
                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4947, Application US/09107532A Patent No. 6583275
GENERAL INFORMATION:
                                                                                                                                                         Matches
                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO: 4947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
FILING DATE: July 2, 1997
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/107,532A
FILING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 02354
COMPUTER READABLE FORM:
MEDIUM TYPE: CD/RO
                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linear MOLECULE TYPE: protein HYPOTHETICAL: YES ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: (781)893-5007
                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 334 amino ac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 7310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Lynn A Doucette-Stamm TITLE OF INVENTION: NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                231 IIQAFGAGNIPKETAQKLESLLQKGIPVALVSRCFNGIABPVYAYQGGGVQLQKA----- 285
68 PHIMPSHMLVLKERILS-AYASGISGVVITHRTDTLEETAFFLDTTIGNKLPIVLTGAMR
                                68 ESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMR 127
                                                                           12 KMKKILVLHTGGTIAMKENMLTGGVSPDVANPLLDAEIT-IPKHVELL---VEDIFNLPS
                                                                                                                                                         95;
                                                                                                        KLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIAS 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM: <Unknown>
SOFTWARE: ASCII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Waltham
STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --GVFFVKELNAOKARLKLLIAL 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KNDWVVAHDLNPQKARILAMVAM 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IHAGTGNGSVSSRVVPALQELRKNGVQIIRSSR--
                                                                                                                                                                                                                                                                                                                                  ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (781)893-8277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                       Conservative
                                                                                                                                                                         19.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CD/ROM IS09660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ENTEROCOCCUS
                                                                                                                                                       65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         acids
                                                                                                                                                       Score 331.5; DB 4;
Pred. No. 9.4e-23;
55; Mismatches 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and David Bush
AND AMINO ACID SEQUENCES RELATING TO
FABCIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                         4947:
                                                                                                                                                         Indels
                                                                                                                                                                                            Length 334;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQGGFVLRNAEQPDD
                                                                                                                                                       35;
                                                                                                                                                     Gaps
                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          297
126
                                                                                                                                                         9
```

```
RESULT 15
US-09-248-796A-17491
                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       श्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
US-09-543-681A-8255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
GENERAL INFORMATION:
APPLICANT: Keith Weinstock et al
APPLICANT: Keith Weinstock et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS: 8344
SEQ ID NO 8255
LENGTH: 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 8255, Application US/09543681A Patent No. 6605709
GENERAL INFORMATION:
                                                                             Sequence 17491, Application US/09248796A Patent No. 6747137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Proteus mirabilis
-09-543-681A-8255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABII TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT FILING DATE: 2000-04-05
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR PILING DATE: 1999-04-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: GARY BRETON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                    179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            187
                                                                                                                                                                                                                           286 NMGGYATGQA 295
                                                                                                                                                                                                                                                                                                                                                              231 GNVTDTAYKALAQNGAKALI--HAGTGNGSVSSRVVPALQELRKNGVQIIRSSR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         126 IPLEALRSDGQTNLLNALYIAAHHPI--NEVALPFNNTLYRG---NRAIKAHADGPNA-- 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     127 RPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAPKSAW 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       296 ----EKMGIIFCNSINSQKARVKLLIAVNYGLSGEBL 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68 SNITPEDWQSIADDISB--NYCHYDGFVILHGTDTWAFTASALSFWFEGLAKPVIVTGSQ 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 NVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPEL--ADLANVR-GEQVMQIAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                       QQGGFVLRNA 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ESITNODLLKLASSVAELADSNOVDGIVITHGTDTLEETAYFLN-LVEKTDKPIVVVGSM 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAKALIHAGTGNGSVSSRVVPALQBLRKNGVQIIRSSR------QQGGFVLRNA 292
                                                                                                                                                                                                                                                                                                                     PGLSDEVVKNILMQPVKÄLILRSYGVGNAPSHPALLSTLREATERGVVVVNLTQCISGRV 285
                                                                                                                                                                                                                                                                                                                                                                                                               GPLGMVVEGKSYWFRLPAKRHTVNSEFDIK--QISSLPQ------VDIAYSY 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIYVVYTGGTI----GMQHSDHG-YIPVSGHLQRQLAKMPEFHREEMPNFTIKEHLPLIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EQPDDKNDWVVAHDLNPQKARILAMVAMTKTQDSKEL 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KVDGLVIKALGAGNLPPQALAALEKLLVQKIPVVLVSRCFNGIAEPVYDYEGGGKEL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GPLGMVVEGKSYWFR--LPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQN 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSNELGSDGLYNFESAIRVASCEEALDKGVLVVMNDEIHSARYVTKTHTTNVATFRTPTL 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTBAFKS-AW 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GPIGLVTKNRILFLQELLETKR-----LDISAVDG--TIPIVKAYAGMQGDLLEAIAHT 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11.5%; Score 194; DB 4; Length 347; 24.2%; Pred. No. 8.3e-10; Live 58; Mismatches 123; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                      282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   295
                                                                                                                                                                                                                                                                                                                                                                                                               225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67
```

```
CURRENT APPLICATION NUMBER: US/09/248,796A
CURRENT FILING DATE: 1999-02-12
PRIOR APPLICATION NUMBER: US 60/074,725
PRIOR FILING DATE: 1998-02-13
PRIOR APPLICATION NUMBER: US 60/096,409
PRIOR PILING DATE: 1998-08-13
NUMBER OF SEQ ID NOS: 28208
SEQ ID NO 17491
LENGTH: 227
TYPE: PRT
ORGANISM: Candida albicans
                                                                                                                                      S
                                                                                                                                                                                               밁
                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                              8
     밁
                                            δ
                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-248-796A-17491
                                                                                                                                                                                                                                                                                                                                                                                            Query Match 11.4
Best Local Similarity 29.2
Matches 66; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: FOR DIAGNOSTICS AND THERAPBUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 107196.132
179 NGKPATKKVPFVNAIAGGYLNPQKARILLQLCLNEGMDLSKIKNVF 224
                                              294 -- QPDDKN-----DWVVAHDLNPQKARILAMVAMTKTQDSKELQRIF 333
                                                                                                                                              248 ALIHAGTGNGSVSSRVVPALQELRKN--GVQIIRSSRQQGGF-----
                                                                                                                                                                                                                                         206 ----RHTVNSEF------DIKQISSLPQVDIAYSYGNVTDTAYKALAQN-GAK 247
                                                                                                                                                                                                                                                                                                                                                   147 ASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKS-AWGPLGMVVEGKSYWFRLPAK 205
                                                                                                                                                                                                  61 PLGLTMFHINDLFSSSYYYYAIGGNDI--IPCLPEVTIIYAHQGLNNEIFKFVINDLKSK 118
                                                                                                  GIILATMGAGSMSDKTNQYLSDLLINNPNYPIVYSKRSMDGMVPIGSLPKVLAVIKDAAD 178
                                                                                                                                                                                                                                                                                                    ASNRESRGRGVLIALNDRIGSGFYITKSNANSLDTFKSIGQGYVGNFVNNEIRYFFPPAK
                                                                                                                                                                                                                                                                                                                                                                                               11.4%; Score 191.5; DB 4; 29.2%; Pred. No. 7.2e-10; ative 39; Mismatches 80;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 227;
                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                    41;
                                                                                                                                                   VLRNAE - 293
                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

60

Search completed: March 18, Job time: 45 secs 2005, 21:34:11 Lhis Page Blank (uspto)

```
Regult
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0% Maximum Match 100%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                           100.0
45.1
42.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   March 18, 2005, 21:26:43; Search time 141 Seconds (without alignments) 787.673 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1401741 seqs, 330541175 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-842-628-2
1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13:12:10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Published_Applications_AA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US09A_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US09A_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US09A_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/US10E_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEVENQQKLANVVILATGGT......MVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                      Length DB
     364
320
325
544
544
723
1862
313
14 US-10-406-025-2
10 US-09-882-227-84
11 US-10-472-928-4160
12 US-10-472-928-4160
9 US-09-738-626-5846
15 US-10-282-122A-65021
15 US-10-282-122A-64063
15 US-10-282-122A-64156
                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                       US-09-842-628-2
                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                  Sequence 2, Appli
Sequence 410, Appl
Sequence 5846, Ap
Sequence 5813, Appl
Sequence 65021, Appl
Sequence 65715, A
Sequence 69463, A
Sequence 69463, A
Sequence 64156, A
Sequence 5967, Ap
                                                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                                                                                                  Sequence 2, Appli
```

# ALIGNMENTS

```
S
                                                                                                                            밁
                                                                                                                                                                 8
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; LENGTH: 375
; TYPE: PRT
; ORGANISM: Bacillus subtilis
US-10-406-025-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 2
US-10-406-025-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn version 3.2 SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: No. US20030186380Alozymes Biotech,
APPLICANT: Thomas, Michael D.
APPLICANT: Sloma, Alan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/10406025 Publication No. US20030186380A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: methods for producing secreted polypeptides having L-asparaginase TITLE OF INVENTION: activity FILE REFERENCE: 10289:200-US CURRENT APPLICATION NUMBER: US/10/406,025 CURRENT FILING DATE: 2003-04-01 PRIOR APPLICATION NUMBER: US 60/369,192 PRIOR APPLICATION NUMBER: US 60/369,192 PRIOR FILING DATE: 2002-04-01 PRIOR PILING DATE: 2002-04-01 PRIOR PILING DATE: 2002-04-01
                                             344
                                                                                                                                                                                                                                                       185
                                                                                                                                                                                                                                                                                                                                                                                   107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              σ
                                                                                                                                                                                                                                                    AWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQN
                                                                                                                                                                                                                                                                                                                                       MRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKS- 184
                                                                                                                                                                                                                                                                                                                                                                                                                ASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QVMQIASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPI
                                             NSLNPOKARMLIMLALTKINDPOKIOAYFNEY 375
                                                                            HDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                        GAKGIVPAGSGNGSLSDAAEKGADSAVKKGVTVVRSTRTGNGVVTPNQDYAE--KDLLAS
                                                                                                                                                                      GAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVA 304
                                                                                                                                                                                                                                                                                                                                                                                   GSTNIDNKILLKLAKRINHLLASDDVDGIVVTHGTDTLEETAYFLNLTVKSDKPVVIVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LAQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AFKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AFKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTE
                                                                                                                                                                                                               EMGEVGTIAD-DIYENNEITRKHTKDTDESVSNLDELEQVDIIYGYQNDGSYLEDAAVKA
                                                                                                                                                                                                                                                                                                  MRPSTAISADGPSNLYNAVKVAGAPEAKGKGTLVVLNDRIASARYVTKTNTTTTDTFKSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KKDLPNIRILATGGTIAGADQSKTSTTEYKAGVVGVESLIEAVPEMKDIANVSGEQIVNV 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LAQNGAKALIHAGTGNGSVSSRVVPALQBLRKNGVQIIRSSRQQGGFVLRNAEQPDDKND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDE1QSGRDVSKSINIKTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QVMQIASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLBBTAYFLNLVEKTDKPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45.1%; Score 758; DB 14; Length 375; 47.6%; Pred. No. 5.6e-57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                                              343
                                                                                                                                                                                                                                                                                                                                                                                                                           125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                 285
                                                                                                                                                                                                                                                         244
                                                                                                                                                                                                                                                                                                                                                                                   166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                  226
APPLICANT: CHERON SPA
APPLICANT: THE INSTITUTE FOR GENOMIC RESEARCH
ITITLE OF INVENTION: STREPTOCCCCUS PNEUMONIAE PRO
FILE REFERENCE: P026926WO
CURRENT APPLICATION NUMBER: US/10/472,928
CURRENT FILING DATE: 2003-09-26
PRIOR APPLICATION NUMBER: GB-0107658.7
PRIOR APPLICATION NUMBER: GB-0107658.7
PRIOR FILING DATE: 2001-03-27
NUMBER OF SEQ ID NOS: 4979
SOPTWARE: SegWin99, version 1.03
SEQ ID NO 4160
LENGTH: 320
```

Sequence 4160, Application US/10472928 Publication No. US20050020813A1 GENERAL INFORMATION:

PROTEINS AND NUCLEIC ACIDS

```
S
                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                           밁
                                                                                                          á
                                                                                                                                                      片
                                                                                                                                                                                     δ
                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-09-882-227-84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 3
US-09-882-227-84
US-10-472-928-4160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 84, Ap
Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOPTWARE: PastSEQ for Windows Version 4.0 SEQ ID NO 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Ocomen, Raymond P.

TITLE OF INVENTION: Identification of Polynucleotides
TITLE OF INVENTION: Encoding No. US20030158396Ale1 Helicobacter Polypeptides in TITLE OF INVENTION: Genome PILE REFERENCE: 66132/047002
CURRENT APPLICATION NUMBER: US/09/882,227
CURRENT FILING DATE: 2001-06-15
PRIOR APPLICATION NUMBER: US 08/902,615
PRIOR PILING DATE: 1997-07-29
NUMBER OF SEQ ID NOS: 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Kleanthous, Harold APPLICANT: Al-Garawi, Amal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 364
                                                                           333
                                                                                                                  305
                                                                                                                                                        276
                                                                                                                                                                                             245
                                                                                                                                                                                                                                    216
                                                                                                                                                                                                                                                          186 WGPLGMYVEGKSYWFRLFAKRHTVNSEFDIKQISS-LFQVDIAYSYGNVTDTAYKALAQN
                                                                                                                                                                                                                                                                                                               156
                                                                                                                                                                                                                                                                                                                                                127 RPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTBAFKSA- 185
                                                                                                                                                                                                                                                                                                                                                                                             96
                                                                                                                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      37 ONLPTIALLATGGTIAGSGAS-ASLGSYKSGELGIKELLKAIPSLNRLARIQGEQISNIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7 QKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIA 66
                                                                           DNLNPQKARVLLQLALTKTNNKEKIQEMFEEY 364
                                                                                                                                                                                                                                                                                                                                                                                                                     SESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKFIVVVGSM 126
                                                                                                              HDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                        HAKGVVIAGVGNGNVSAGFLKAMQEASQMGVVIVRSSRVNSGBI--TSGEIDDK-AFITS
                                                                                                                                                                                           GAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVA
                                                                                                                                                                                                                                  SGAIGSVYYGKTRYYMQPLRKHTTESEFSLSQLKTPLPKVDIIYTHAGMTPDLFQASLNS
                                                                                                                                                                                                                                                                                                                 RNAASLSADGALNLYNAVSVALNEKSANKGVLVVMDDNIFSAREVIKTHTTHTSTFKALN
                                                                                                                                                                                                                                                                                                                                                                                           SQDMNEEVWFKLAKRAQELLDDSRIQGVVITHGTDTLEESAYFLNLVLRSTKPVVLVGAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Miller, Charles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/09882227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tomb, Jean-Francois
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US20030158396A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42.7%; Score 717; DB 10;
44.6%; Pred. No. 1.9e-53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75; Mismatches 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 364;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                                                                                                             244
                                                                                                                                                                                                                                                                                                                                                                                               155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95
                                                                                                                                                                                                                                      275
                                                                                                                                                                                                                                                                                                                 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
```

٠.

```
APPLICANT: IKEDA, MASATO
APPLICANT: OZAKI, AKIO
APPLICANT: OZAKI, AKIO
TITLE OP INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-125
CURRENT PILING DATE: 2000-12-18
PRIOR APPLICATION NUMBER: UP 99/377484
PRIOR APPLICATION NUMBER: UP 99/377484
PRIOR FILING DATE: 1999-12-16
PRIOR FILING DATE: 1999-12-16
PRIOR FILING DATE: 2000-04-07
PRIOR PILING DATE: 2000-06-03
NUMBER OF SEQ ID NOS: 7059
SOPTWARE: PALENTIN VEY: 3.0
SEQ ID NO 5846
LENGTH: 325
TYPE: PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  श्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     श्च
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-738-626-5846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-472-928-4160
                                                              US-09-738-626-5846
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: NAKAGAWA, SATOSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 5846, Application US/09738626 Publication No. US20020197605A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity Matches 102; Conserv
                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: L-asparaginase, putative
OTHER INFORMATION: Cellular location: cytoplasm
OTHER INFORMATION: Similar to strain R6 sequence 15903854 (0.E+01)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Streptococcus pneumoniae FEATURE:
                                                                         ORGANISM: Corynebacterium glutamicum
y Match 14.9%; Score 251; DB 9; Length 325; Local Similarity 26.2%; Pred. No. 3.4e-13; res 75; Conservative 53; Mismatches 120; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131 AMSADGMINIYNAVAVASNKDSRGKGVIVTMNDEIQSGRDVSKSINIKTEAFKS-AWGPL 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12 VVILATGGTIA-GAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INDDLLKLASSVABLADSNDVDGIVITHGTDTLBETAYFLNLVEKTDKPIVVVGSMRPGT 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KPKHMLVLYQKIKEBAD--NYDGVVITHGTDTLEBTAYFLDTMEVPHMPIVLTGAMRSSN 115
                                                                                                                                                                                                                                                                                                                                         YOKOI, HARUHIKO
TATEISHI, NAOKO
SENOH, AKIHIRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --GVFFVKELNAQKARLKLLIAL 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IHAGTGNGSVSSRVVPALQELRKNGVQIIRSSR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GLIMKQBILYFKTABPR----VRFDLDHIQGL--VPIISAYAGMTDELIDMLDLEHLDGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAKAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ELGSDGVYNYLSALRVASDDRAADKGVLVVMNDEIHAAKYVTKTHTTNVSTFQTPTHGPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ILVLHTGGTISMQADASGAVVTSSDNPMNHVSNPLEGI-----QVHALDFFNLPSPHI
                                                                                                                                                                                                                                                                                                                                                                                                                    MIZOGUCHI, HIROSHI
ANDO, SEIKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KNDWVVAHDLNPQKARILAMVAM 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IIQAFGAGNIPKETAQKLESLLQKGIPVALVSRCFNGIAEPVYAYQGGGVQLQKA-----
                                                                                                                                                                                                                                                                                                                                                                                     OCHIAI,
                                                                                                                                                                                                                                                                                                                                                                                                     HAYASHI, MIKIRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                       KEIKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 356; DB 17;
Pred. No. 2.7e-22;
1; Mismatches 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQGGFVLRNAEQPDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36;
    38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 당
                                                             밁
                                                                                                                                                Ś
                                                                                                                                                                                맑
                                                                                                                                                                                                                                        묽
                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                           δ
                                                                                        S
                                                                                                                     片
                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-369-493-513
      밁
                                                                                                                                                                                                                                                                                                                                                             Matches
      345
                                 207
                                                              292
                                                                                        164
                                                                                                                     235
                                                                                                                                                   113
                                                                                                                                                                                175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  190
                                                                                                                                                                                                              97
                                                                                                                                                                                                                                                                                                   57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22
                                                                                                                                                                                                                                                                                                                                                             94;
    NAIKGELDSTDSDYAREKLQERLAKLSGGVAVIRVGAATETELKEKKHRYEDALSTARSA
```

```
APPLICANT: Cao, Yongwei
APPLICANT: Hinkle, Gregory J.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Goldman, Barry S.
APPLICANT: Chen, Xianfeng
TITLE OF INVENTION: EXPRESSION OF MICROBIAL PROTEINS IN
TITLE OF INVENTION: PLANTS WITH IMPROVED PROPERTIES
FILE REFERENCE: 38-10(52052)B
CURRENT APPLICATION NUMBER: US/10/369,493
CURRENT FILING DATE: 2003-02-29
PRIOR APPLICATION NUMBER: US 60/360,039
PRIOR PILING DATE: 2002-02-21
NUMBER OF SEQ ID NOS: 47374
SEQ ID NO 513
LENGTH: 548
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; ORGANISM: Deinococcus radiodurans US-10-369-493-513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 513, Application US/10369493 Publication No. US20030233675A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                    117 RGIDKAVAVAIEEIKKLAVSVEDSEAIKKVAGISANDE--TVGQEIASAMDKVGKEGVIT 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        130 TAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSAWGPL 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12
                                                                                                                                                                                                                                                                                                                                                                                                                                                         39 VGVDKLIA-GVPELADIA-NVRGEQVMQIASESITNDDLLKLASSVAELADSNDVDGIVI 96
HTVNSEFDI-------KQISSLPQVDIAYSYGNVTDTAYKAL-----AQNGAKAL 249
                                                                                                          BIQSGRDVSKSINIKTEAFKSAWGPLGM------
                                                                                                                                                                                                                                                                                IEESKGFDTEVDVVEGMQFDKGFINPYFITNPEKMEAVLEDAYILINEKKISNLKDMLPV
                                                                                                                                                                                                                                                                                                                                              ---THGTDT-----NL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEVELEDKLENIGAQLLKEVASKTNDITGDGTTTATVLGQAIVKEGLRNVAAGANPLALK 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGAQGLVVEAMGSGNVGSRMGDALGKALDAGIPVVMSTRVPRGEV 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFV 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLP-----QVDIAYSYGNVTDTAYKALA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DHPEADGPNNLFEACLIASDPSARGIGALIVFGHAVIPARGCVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRPG 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VAVITTGGTI -- ACTSDANGHLLPTVS-GAD-LLAPIAPRENGAQIAFEIHEINRLDSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGE--QVMQIASES
                                                                                                                                                                  LEKVAQTGRPLLIIAEDVEGEALATLVVNKLRGTLNI--AAVKAPGFGDRRKEMLRDI-A
                                                                                                                                                                                                                           ---VEKTDKPIVVVGSMRPGTAMSA-----DGMLNLYNAVAVASNKDSRGKGVLVTMND 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEVENQQKLANV-----VILATGGTIAGAGASAAN------SATYQAAK 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WHTSDELAFATNGPEEPERPDALPVAKLADVSVEIIPAYPGATGAMVEAAI 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7.6%; Score 127.5;
19.8%; Pred. No. 0.03
ative 70; Mismatches
                                                        --NVGMEMLGRAARIRITKDETTIVDGKGEQAQIDARV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.035;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146;
                                                                                                          -----VVEGKSYWFRLPAKR 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IN PLANTS FOR PRODUCTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          548;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                        344
                                                                                                                                                                        291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       137
                                                                                                                                                                                                                                                                                                                                              112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                      234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ဝူ
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                US-10-282-122A-65021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-282-122A-65021
                                                                                                                                                                                                                                                                                                                                                                                                           Remaining Prior Application data removed -
NUMBER OF SEQ ID NOS: 78614
SOPTWARE: PatentIn version 3.1
SEQ ID NO 65021
LENGTH: 544
                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 65021, Application US/10282122A Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: 60/206,848 PRIOR FILING DATE: 2000-05-23 PRIOR APPLICATION NUMBER: 60/207,727 PRIOR FILING DATE: 2000-05-26 PRIOR APPLICATION NUMBER: 60/230,335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Identification of Essential Genes in Microorganisms FILE REFERENCE: ELITAA.034A CURRENT APPLICATION NUMBER: US/10/282,122A CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: 60/267,636
PRIOR FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Neisseria gonorrhoeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/191,078 PRIOR FILING DATE: 2000-03-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Wang,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                         Match 6.8%;
Local Similarity 19.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 2000-09-06
APPLICATION NUMBER: 60/230,347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/257,931 FILING DATE: 2000-12-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 60/253,625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 2000-09-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 2000-11-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: 60/242,578
                                                                    118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               465 VNÁVVGSDKARYGFNAATGEYVEDMVAAGIVDPAKVTRTALQNAÁSÍGÁLILTTE 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            290 RNAEQPDDK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 250 IHAG--TGNGSVSSRVVPALQELRKN------GVQI------IRSSRQQGGFVL 289
                         96
                                                                                                              39 VGVDKLIAG-VPELADLANV--RGEQVMQIASESITNDDLLKLASSVAELADSNDVDGIV 95
                                                                                                                                                             88
                                                                                                                                                                                                                                                      80;
                                                                                                                                                                                                       1 KEVENQQKLANV-----VILATGGTIAGAGAS-----AANSATYQAA------K 38
                         ITHGTDTLEE----
                                                                    RGIDKAVAALVEELKNIAKPCDTSKEIAQVGSISANSDE--QVGAIIAEAMEKVGKEGVI 175
                                                                                                                                                           KETELKDKFENMGAQMVKEVASKTNDVAGDGTTTATVLAQSIVAEGMKYVTAGMNPTDLK 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VEEGIVAGGGTTLLRVIPAVRKAAESLTGDEATGARILIRALEEPARQIAANAGEEGSVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Carr, Grant
Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zamudio, Carlos
Malone, Cheryl
Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ohlsen, Kari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Trawick, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zyskind, Judith
                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Liangsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----ARILAMVAMTK 322
                                                                                                                                                                                                                                                  ; Score 114; DB 15; ; Pred. No. 0.51; 61; Mismatches 130;
                       -----TAYFLNLVEK----TDKPIVVVGSMRPGTAMSADG 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         See File Wrapper or PALM
                                                                                                                                                                                                                                                                                            Length 544;
_
_
::
                                                                                                                                                                                                                                                    Indels 146;
                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         464
                                                                                                                                                                                                                                                    19;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                         ; ORGANISM: Neisseria
US-10-282-122A-65715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 8
US-10-282-122A-65715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                    SOFTWARE: PatentIn
SEQ ID NO 65715
                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 65715, Application US/10282122A Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                      Remaining Prior Application data removed - See File Wrapper or PALM NUMBER OF SEQ ID NOS: 78614
                                                                                                                                                                                                                              PRIOR FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: 60/191,078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                               LENGTH: 544
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 60/206,848
                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 60/253,625
FILING DATE: 2000-11-27
APPLICATION NUMBER: 60/257,931
FILING DATE: 2000-12-22
                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 60/230,335
FILING DATE: 2000-09-06
APPLICATION NUMBER: 60/230,347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 2000-05-23
APPLICATION NUMBER: 60/207,727
FILING DATE: 2000-05-26
                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/267,636
                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 2000-10-23
                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/242,578
                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 2000-09-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        350 RQQIETATSDYDKEKLQERVAKLAGGVAVIKVGAATEVEMKEKKDRVEDALHATRAAVEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            206 ---RHTVNSEFD-----AYKALAQN 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             233 LLPVLEQVAKÁŚRPLLIIAEDVEGEALATLVVNNI---RGILKTVAVKAPGFGDRRKAML 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               137 MINLYNAVAVASN-----KDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAF------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    176 TVEDGKSLENELDVVEGMQFDRGYLSPYFINDAEKQIAGLDNPFVLLFDKK---ISNIRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wang, Llan, Zamudio,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAKALIHAGTGNGSVSSRVVPALQELRKN-----GVQIIRSSRQQGGFVLRNAEQP 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GVVA-----GGGVALLRARAALENLHTGNADQDAGVQI--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QDIAILTGGVVISEEVGLSLEKATLDDLGQAKRIEIGKENTTVIDGFGDAAQIEARVAEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ohlsen, Kari
Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wall, Daniel
Trawick, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Malone, Cheryl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Haselbeck,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carr, Grant
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Liangsu
                                                                                           meningitidis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Carlos
                 6.7%; Score 113; DB 15; 18.9%; Pred. No. 0.62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----KSAWGPLGM----- 205
 62;
 Mismatches
 130;
                                   Length 544;
 Indels 146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VLRAVESP
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        232
 19,
```

```
APPLICANT: Foreyth, R.
APPLICANT: Xu, H.
APPLICANT: Xu, H.
APPLICANT: Xu, H.
ITILE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A
CURRENT FILING DATB: 2003-02-20
PRIOR APPLICATION NUMBER: G0/191,078
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,337
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR FILING DATE: 2000-09-06
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/253,625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-282-122A-60463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                     PRIOR FILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR PLLING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-16
PRIOR PILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 60463, Application US/10282122A Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                  PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     410 GVVA-----GGGVALLRARAALENLHTGNADQDAGVQI------VLRAVESP 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137 MLNLYNAVAVASN------KDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96 ITHGTDTLEB------TAYFLNLVEK----TDKPIVVVGSMRPGTAMSADG 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              58
Prior Application data removed - See File Wrapper or PALM SEQ ID NOS: 78614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAKALIHAGTGNGSVSSRVVPALQELRKN-----GVQIIRSSRQQGGFVLRNAEQP 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RQQIETATSDYDKEKLQERVAKLAGGVAVIKVGAATEVEMKEKKDRVEDALHATRAAVEE 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---RHTVNSBFD------KQISSLPQVDIAYSYGNVTDT--AYKALAQN 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QDIAILTGGTVISEEVGLSLEKATLDDLGQAKRIEIGKENTTIIDGFGDAAQIEARVAEI 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----VVEGKSYWFRLPAK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TVEDGKSLENELDVVEGMQFDRGYLSPYFINDAEKQIAGLDNPFVLLFDKK---ISNIRD 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RĞIDKAVAALVEELKNIAKPCDTSKEIAQVGSISANSDB--QVGAIIAEAMEKVGKEĞVI 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VGVDKLIAG-VPELADLANV--RGEQVMQIASESITNDDLLKLASSVAELADSNDVDGIV 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LLPVLEQVAKASRPLLIIAEDVEGEALATLVVNNI----RGILKTVAVKAPGFGDRRKAML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KE I ELKDKFENMGAQMVKEVASKTNDVÅGDGTTTATVLAQS I VÅEGMKYVTAGMNPTDLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEVENQQKLANV-----VILATGGTIAGAGAS-----AANSATYQAA-----K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Carr, Grant
Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wall, Daniel
Trawick, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ohlsen, Kari
Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 60463
LENGTH: 723
                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
```

```
; LENGTH: 723
; TYPE: PRT
; ORGANISM: Listeria monocytogenes
US-10-282-122A-60463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
US-10-282-122A-49757
                                                                                                                                                                        PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR PELICATION NUMBER: 60/206,848
PRIOR PELING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR PILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-09-09
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR PILING DATE: 2000-09-09
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR PILING DATE: 2000-09-09
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR APPLICATION NUMBER: 60/242,578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 49757, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 6.7%; Score 113; DB 15; Best Local Similarity 22.8%; Pred. No. 0.94; Matches 74; Conservative 56; Mismatches 111.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
                         OR FILING DATE: 2000-09-06
OR APPLICATION NUMBER: 60/230,347
OR FILING DATE: 2000-09-09
OR APPLICATION NUMBER: 60/242,578
OR FILING DATE: 2000-10-23
OR APPLICATION NUMBER: 60/253,625
OR FILING DATE: 2000-11-27
OR APPLICATION NUMBER: 60/257,931
OR FILING DATE: 2000-12-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         378 LENKNRLIPLAKETKIALVGPLASSPDILGGWNVYGBEKDGIN-VETGLREVFETVEVIS 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 VENQQK---LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : Wang, Liangsu
Zamudio, Carlos
Malone, Cheryl
Haselbeck, Robert
Ohlsen, Kari
Ohlsen, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LODVTASI-SRPVKELKAPEKVALO 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WFRLPAKRHTVNSEFDIKQISSLPQ-----VDIAYSYGNVTDTAYKALAQNGAKALIH 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MSFPQTTGQIPVYYNHLRTGRPQTPENKGERYVSHYLDIPNEPFY----PFGY---GKSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----GKGVLVTMNDBIQSGRD------VSKSINIKTEAFKSAWGPLGMVVEGKSY 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FVQTLEKPVVITLFNGRPLEVKELAESSDALLELWFPGTEAGRVTADLLSGASNPSGKLS 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LVEKTDKPIVV-VGSMRP----GTAMSADGMLNLY-----NAVAVASNKDSR-- 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TEYTEFSDEDKVAVKAAVQNMDVVVLA----LGEKNEWGGEAGSLATIRLPEAQYELAK 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EQVMQIASE-----SITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFL-N 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTGNGSVSSRVVPALQELRKNGVQ 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----SEFELK-TSSLPKELNLGEPLHVEVTIKNISDIAGKEVIQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yamamoto,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wall, Daniel
Trawick, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Carr, Grant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Porsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Robert
60/267,636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches 111; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 723;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       604
```

```
FITTLE OF INVENTION: Identification of Essential Ger
FILE REFERENCE: ELLTRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR FILING DATE: 2000-05-23
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR PRILING DATE: 2000-05-06
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR FILING DATE: 2000-09-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-282-122A-64156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś

// ORGANISM: Burkholderia fungorum
US-10-282-122A-49757

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 64156, Application US/10282122A Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn version 3.1 SEQ ID NO 49757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                APPLICANT:
TITLE OF I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
Remaining Prior Application data removed -
NUMBER OF SEQ ID NOS: 78614
                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Wang,
                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENGTH:
APPLICATION NUMBER: 60/230,347 FILING DATE: 2000-09-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1297 GKLAAGTTVGVTALNDIN-----VAGAIESNGDAVLNAQQ 1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1093 DV--QAGSTIALTASNDVNLTGTLAGGSTVALTA------GQDVNVSGTLQ---SSS 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1044 LNAGGTIGGVGÄLÄFGNAATLTS---GRDTDLTG-----SLRGATIQTGAGGSGTFA 1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134 ADGMINIYNAVAVASNKDSRGK-GVL------VTMNDBIQSGRDV------ 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74 DLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRPGTAMS 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15 LATGGTIAGAGASA-ANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASESITND 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Many,
Zamudio, charyl
Tone, Cheryl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----SSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQ 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----SKSINIKTEAFKSAWGPL--GMVVEGKSYWFRLPAKRHTVNSEFDIK 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DTNLTALYGSVGVTGSVNSNGALNVLAGTDINLGGTTTVALDTTLQSARDVNVTGSLSGQ 1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QVSAVGNVAV----NNIESTSTLÄLSAGTGGSGSLTVNGAAAAASAITATANGDVTVASA 1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QISSLPQVDIAYSYGNVTDTAYKALAQ------NGAKALIHA--GTGNGSV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GNGFVTAGRNIGGAGSLAFAQSAVLNAAGAISQGGLIQGQNV----
                                                                                                                                                                                                                                                                                                                                                        Carr, Grant
Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ohlsen, Kari
Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                  Trawick, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Carlos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6.7%; Score 113; DB 15; 22.9%; Pred. No. 3.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     See File Wrapper or PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        102;
                                                                                                                                                                                                                                                                                                                Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1862;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 114;
                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                                                                              Microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1240
```

```
片
                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; LENGTH: 543
; TYPE: PRT
; ORGANISM: Mycoplasma pneumoniae
US-10-282-122A-64156
                                                                                                                               S
                                                                                                                                                                              문
                                                                                                                                                                                                                                                                      뭐
                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 64156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Remaining Prior Application data removed NUMBER OF SEQ ID NOS: 78614 SOFTWARE: Patentin version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 2000-10-23
APPLICATION NUMBER: 60/253,625
FILING DATE: 2000-11-27
                                                                                                                                                                                                                          159
  402
                                            247 KALIHAG--TGNGSVSSRVVPALQELR-----
                                                                                                                                  211 SEFDI-----AQISSLPQVDIAYSYGNVTDTAYKAL-----AQNGA 246
                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                          171 -GVITTDDAKTINTTLETTEGIEFKGTYASPYMVSDQBKMEVVLDQPKILVSAMKINTIK 229
                                                                                                                                                                                                                                                                                                                                                                                                                                             113 VNVRRGIEDASQLIITELDKRSKKINTNEEIEQVAAISSGSKEIGKLIAQAMALVGKN-- 170
                                                                                                                                                                                                                                                                                                                                                                                                      92 DGIVITHGTDTLEET---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55 ANVR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57 KEIELTDPLENIGAKVISVAAVSTNDIAGDGTTTATILAQEMTNRGVEAVNNG----ANP 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KEVENQQKLANV-----VILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6.7%;
Similarity 20.0%;
                                                                                                                                                                                                                                                                                                                -----GSMRPG------TAMSADGMLNLYNAVAVASNK-DSRGKGVL-- 158
KAAVEEGIISGGGIALLNVSTILNDSKLADKYKAETSAENLKEILVGYEIVRKS 455
                                                                                     KHLDLLNGRLKQTTEKYDTDLLKERIAHLSOGVAVVRVGGATELAQKELKLRIEDALNST
                                                                                                                                                                              LAISTGTLAYNNELGGGFKDV--TVNHLGEARRV-----QVAKEKTTVIGGKGSKETIQ
                                                                                                                                                                                                                     -----VIMNDEIQSG-RDVSKSINIKTEAFKSAWGPLGMVVEGKSYWPRLPAKRHTVN 210
                                                                                                                                                                                                                                                                    EILPLLEGSMENGNPLLIVAPDFAEEVVTTLAVNKLRGTINVVAVKCNEYGERQKAALED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 112; DB 15;
Pred. No. 0.76;
                                                                                                                                                                                                                                                                                                                                                                                                      ----AYFLNLVEK----TDKPIVVV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -GEOVMOIASESITNDDLLKLASSVAELADSNDV 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             See File Wrapper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131; Indels 148;
                                            -KN-----GVQIIRSS 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                          401
                                                                                                                                                                                341
                                                                                                                                                                                                                                                                        289
                                                                                                                                                                                                                                                                                                                                                                                                        123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18;
```

US-09-738-626-5967 Sequence 5967, Application US/09738626 Publication No. US20020197605A1 GENERAL INFORMATION APPLICANT: APPLICANT: APPLICANT: APPLICANT:
APPLICANT: CURRENT APPLICATION NUMBER: US/09/738,626
CURRENT FILING DATE: 2000-12-18 APPLICANT: IKEDA, MASATO
APPLICANT: OZAKI, AKIO
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES APPLICANT: PRIOR APPLICATION NUMBER: JP 99/377484
PRIOR FILING DATE: 1999-12-16 FILE REFERENCE: 249-125 APPLICANT: APPLICANT: NAKAGAWA, SATOSHI APPLICATION NUMBER: JP 00/159162 YOKOI, HARUHIKO TATEISHI, NAOKO SENOH, AKIHIRO IKEDA, HAYASHI, MIKIRO OCHIAI, KEIKO MIZOGUCHI, I ANDO, SEIKO HIROSHI

8

밁

```
RESULT 13
US-10-781-014-504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: JP 00
PRIOR FILING DATE: 2000-08-03
NUMBER OF SEQ ID NOS: 7059
SOPTWARE: Patentin ver. 3.0
SEQ ID NO 5967
LENGTH: 313
                                                                                                                                  FILE REFERENCE: BGI-126CPCN
CURRENT APPLICATION NUMBER: US/10/781,014
CURRENT FILING DATE: 2004-02-17
PRIOR APPLICATION NUMBER: US 09/602,740
PRIOR APPLICATION NUMBER: 60/141,031
PRIOR PILING DATE: 1999-06-25
PRIOR PILING DATE: 1999-06-25
PRIOR APPLICATION NUMBER: 60/143,208
PRIOR PILING DATE: 1999-07-09
PRIOR APPLICATION NUMBER: 60/151,572
PRIOR APPLICATION NUMBER: 08 19931412.8
PRIOR PILING DATE: 1999-07-08
PRIOR APPLICATION NUMBER: DE 19931413.6
PRIOR APPLICATION NUMBER: DE 19931413.6
PRIOR APPLICATION NUMBER: DE 19931413.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         / TYPE: PRT
/ ORGANISM: Corynebacterium glutamicum
US-09-738-626-5967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Pompejus, Markus
APPLICANT: Kroger, Burkharc
APPLICANT: Schroder, Hartwi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 504, Application US/10781014 Publication No. US20040180408A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Haberhauer, Gregor
TITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES ENCODING
TITLE OF INVENTION: INVOLVED IN CARBON METABOLISM AND ENERGY
TITLE OF INVENTION: PRODUCTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Match 6.6%; Score 110.5; DB 9; Local Similarity 22.0%; Pred. No. 0.46;
  FILING DATE: 1999-07-08
APPLICATION NUMBER: DE 19931420.9
FILING DATE: 1999-07-08
APPLICATION NUMBER: DE 19931424.1
                                                                                             FILING DATE: 1999-07-08
APPLICATION NUMBER: DE 19931419.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 2000-04-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          168 GRDVSKSINIKTEAFKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQ-ISSLPQVDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110 LNLVEKTDKPIVVVGSMRPGTAMSA--DGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15 LATGGTIAGAGASAANSATYQAAKVGVDKLI------AGVPELADLAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57 VRGEQ-----VMQIASESITNDDLLKLASSVABLADSNDVD-GIVITHGTDTLBETAYF 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IYVPTDNMVVSGISSLVQVABQKQIPVIGAESGTVEGGALATL-----GIDYTELGRQT 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AY-SYGNVTDTAYKALAQNGAKALIHA-GTGNGSVSSRVVPALQELRKNGVQIIRSSRQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----QVQVDEVTKAAEPLGLSV------NTQTVTTVNEIQQAVEALGDVDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AELVDSNEAP----GGNVTGTSDIAPIEQQLELLQQLV----PDAKSIGI-VYASGEVNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ANGEOGTALTISOCPASONL---DLVLAVATPAAQATAQNITDIPVLFTAVTD-----AVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGFVLRNAEQPDD 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kroger, Burkhard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zelder, Oskar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hartwig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    00/280988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 313;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: PRT ; ORGANISM: Corynebacterium glutamicum US-10-781-014-504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-282-122A-47225
                                                                                        CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR PILING DATE: 2000-09-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: DE 19931428.4
PRIOR FILING DATE: 1999-07-08
Remaining Prior Application data removed - See File Wrapper or PALM.
NUMBER OF SEQ ID NOS: 784
SEQ ID NO 504
LENGTH: 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 47225, Application US/10282122A Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Identification of Essential Genes
FILE REFERENCE: ELITAA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlo
APPLICANT: Malone, Cheryl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 6.6%; Score 110.5; Local Similarity 22.0%; Pred. No. 0.
APPLICATION NUMBER: 60/230,347
FILING DATE: 2000-09-09
APPLICATION NUMBER: 60/242,578
FILING DATE: 2000-10-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 1999-07-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110 LNLVEKTDKPIVVVGSMRPGTAMSA--DGMLNLYNAVASNKDSRGKGVLVTMNDEIQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57 VRGEQ-----VMQIASESITNDDLLKLASSVAELADSNDVD-GIVITHGTDTLEETAYF 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15 LATGGTIAGAGASAANSATYQAAKVGVDKLI-----AGVPELADLAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20 LASCSSDSSDSSTSTDAAGGDSYRVGINQLVQHPALDAATTGFKEAFEEAGVDVTFDEQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----QVQVDEVTKAAEPLGLSV-----NTQTVTTVNBIQQAVEALGDVDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GRDVSKSINIKTEAFKSAWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQ-ISSLPQVDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ANGEOGTALTISQOFASDNL--DLVLAVATPAAQATAQNITDIPVLFTAVTD-----AVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GEMALRILQDGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGFVLRNABQPDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IYVPTDNMVVSGISSLVQVAEQKQIPVIGAESGTVEGGALATL-----GIDYTELGRQT 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AY-SYGNVTDTAYKALAQNGAKALIHA-GTGNGSVSSRVVPALQELRXNGVQIIRSSRQQ 284
                                                                                                                                                                                                                                                                                                                                                                                                 Yamamoto, Ro
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                  Carr, Grant
Carr, Grant
Carroto, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ohlsen, Karı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Carlos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -GGNVTGTSDIAPIEQQLELLQQLV----PDAKSIGI-VYASGEVNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53; Mismatches 120; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

226

224

167

183

56

79

ð 밁 श्च 밁 र् 밁 श् 밁

```
APPLICANT: Hinkle, Gregory J.

APPLICANT: Slater, Steven C.

APPLICANT: Goldman, Barry S.

APPLICANT: Goldman, Barry S.

APPLICANT: Chen, Xianfeng

ITILE OF INVENTION: EXPRESSION OF MICROBIAL PROTEINS IN PLANTS FOR PRODUCTION OF

ITILE OF INVENTION: PLANTS WITH IMPROVED PROPERTIES

FILE REFERENCE: 38-10 (52052)B

CURRENT APPLICATION NUMBER: US/10/369,493

CURRENT FILING DATE: 2003-02-28

PRIOR APPLICATION NUMBER: US 60/360,039

PRIOR PILING DATE: 2002-02-21

NUMBER OF SEQ ID NO 181

LENGTH: 540

TYPE: PRT

ORGANISM: Xenorhabdus nematophilus

US-10-369-493-181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-369-493-181
; Sequence 181, Application US/10369493
; Publication No. US20030233675A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: PRT
; ORGANISM: Borrelia burgdorferi
US-10-282-122A-47225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: 60/253,625
PRIOR FILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR FILING DATE: 2001-02-05
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Cao,
APPLICANT: Hink
APPLICANT: Slat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 47225
LENGTH: 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Remaining Prior Application data removed - NUMBER OF SEQ ID NOS: 78614 SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6.6%; Score 110.5; Local Similarity 18.0%; Pred. No. 1; es 73; Conservative 68; Miamoria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176 VEESKTFOTTISYVEGMQFDRGYLSPYFSTNKENMSVNFDDAFILIYEKKISSIKELLPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116 KKGIDHAVNLAAEKIRÓSÁKKITTKEEIAQVÁSISANNDSYIGEKIÁEAMDKVGKDGVIT 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97 THGTDTLEET------AYF------AYF------INL 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53 -----SVAELADSNDVDGIVI 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 KEVENQQKLANV------VILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELA- 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VEEGVVPGGGSTLIEVAMYLDTIDTSKLSYEEKQGFEIVKRSLEE 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IHAGT -- GNGSVSSRVVPALQEL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELIKKQIEDSTSEYDKEKLQERLAKLVGGVAVINVGAVTEVELKEKKHRVEDALSATRAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGVLISEELGLTLETVE-----IEQLGQAKTIKVDKDNTTIINTGNKE-QIKERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LEKVLGTNKPLLIIAEDIEGDALAALVLNSVRGALKVCAIKSPGFGDRRKAMLEDI-AVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SLPQVDI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QSGRDVSKSINIKTEAFKSAWGPLGMVVE--GKSYWFRLPAKRHTV----NSEFDIKQIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VBK---TDKPIVVVGSMRPGTAMSADGMLNLYNAVAVASNKD----SRGKGVLVTMNDEI 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RÉIELENPFENMGAQLLKEVAIKT-NDVÁGDGTTTÁTVLAYAIAREGLKNVSSGINPIGI 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68; Mismatches 131; Indels 133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----AYSYGNVTDTAYKAL-----AQNGAKAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -- RKNGVQIIRSSRQQ 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               See File Wrapper or PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 15; Length 545;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17;
```

```
밁
                                                                                                                                        Ś
                                                                                                                                                                                             밁
                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                      믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 6.5%; Score 110; DB 15; Length 540; Best Local Similarity 18.8%; Pred. No. 1.1; Matches 85; Conservative 73; Mismatches 141; Indels 154;
                                                                                                                                                                                                                                                                                           291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        171
466 VNNVKASQGNHGYNAATEEYGDMIEMGILDPTK 498
                                                  289 LRNAE----
                                                                                                408 EEGVVAGGGVALVRAAAAISALTGDNEDQNVGIRV--ALRAMEAPMRQIVENAGEEPSVV
                                                                                                                                                                                             348 QIRQQIEESTSDYDREKLQERVAKLAGGVAVIKVGAATEVEMKEKRARVDDALHATRAAV
                                                                                                                                                                                                                                      206 --RHTV---NSEED------IKQISSLPQVDIAYSYGNVTDT--AYKALA 242
                                                                                                                                                                                                                                                                                                                                        160 TMNDEIQSGRDVSKSINIKTEAFKSAWGPLG------MVVEGKSYWFRLPAK-- 205
                                                                                                                                                                                                                                                                                                                                                                                        231 RELLPVLEGVAKASKPLVIIAEDVEGEALATLVVNNMRGIVKVAAVKAPGFGDRRKAMLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      113 PMDLKRGIDKAVÍAAVEELKKLSVPCSDSTAIAQVGTISANSDE--TVGKLIAEAMDKVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      38 ----KVGVDK-LIAGVPELADLANVRGEQ--VMQIASESITNDDLLKLASSVAELADSND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58 REIELEDKFENM-----GAQMVKEVÄSKÄNDAAGDGTTTATVLAQSIVTEGLKAVAAGMN 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 KEVENQQKLANVVILATGGTIAGAGASAANSATYQAA-----
                                                                                                                                                                                                                                                                                           DI-ATLINGTVIŚEBIGLELE--KATLEDLGQAKRIVINKDTTIIIDGVGEAAAIAARVT 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VDGIV-ITHGTDTLEE------ 112
                                                                                                                                                                                                                                                                                                                                                                                                                                      -----VEKTDKPIVVVGSMRPGTAMSADGMLNLYNAVAVASNK----DSRGKGVLV 159
                                                                                                                                             QNG-----AKALIHAGTGNG---SVSSRVVPALQELRKNGVQIIRSSRQQGGFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEGVITVEEGTGLEDELDVVEGMQFDRGYLSPYFINKPEAGSIELENPYILLVDKKISNI
                                                -- QPDDKNDWVVAHDLNPQK 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                  465
                                                                                                                                                                                                407
                                                                                                                                                                                                                                                                                                                                                                                           290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      37
                                                                                                                                                288
```

Search completed: March 18, 2005, 21:36:39
Job time: 144 secs

`

```
Regult
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                               749.5
749
739.5
717
687
550
485
   418.5
376.5
360.5
356
356
343.5
320.5
319.5
317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         March 18, 2005, 21:14:17 ; Search time 41 Seconds (without alignments) 788.508 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           283416 seqs, 96216763 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-842-628-2
1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIR 79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KEVENQQKLANVVILATGGT......MVAMTKTQDSKELQRIFWEY 336
   GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
083478
082953
085953
085953
085953
085953
085959
086979
0869754
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
086979
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                283416
                    periplasmic L-aspa periplasmic L-aspa asparaginase (EC 3 L-asparaginase (EC 3 asparaginase (EC 3 asp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     glutaminase-aspara (EC 3.5.1.38) (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
```

RESULT 2

B 8	8 8 8 8	용 성	용 성	음 성	3 m O	30 31 32 32 33 33 34 35 36 41 42 43 43 44 45 45 45 47 48 48 49 49 49 49 49 49 49 49 49 49	
					Query Match Best Local S Matches 284	30 298 17.7 347 2 G75283 31 296 17.6 310 2 H87058 32 289 17.2 417 2 D64302 33 280 16.7 438 2 B71021 34 279.5 16.6 32.6 2 G70760 35 279 16.6 438 2 B75112 36 259.5 15.4 435 2 C69194 37 252 15.0 444 2 F90244 38 250 14.6 418 2 B69360 40 239 14.2 317 2 PG2303 41 239 14.2 317 2 PG2528 44 195.5 11.6 71.5 2 T19500  RESULT 1 C183478 C183478 C18481 PSEUDOMORAS BETUSINOSA C19Accession: C83478 C19CCession: C83478 C19CCession: C83478 C19CCession: C83478 A1 CONTY, S.; Yuan, Y.; Brody, L.L.; Mizog adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N V. LOTY, S.; Olson, M.V. Nature 406, 959-964, 2000 A171tle: Complete genome sequence of Pseudomon A; Reference number: A82950; MUID:20437337; PMIA; Accession: C83478 A; Roccession: C83478 A; Residues: 1-362 <sto 1-362="" <sto="" a;="" asparaginase<="" c83478="" c;="" excession:="" residues:="" superfamily:="" td=""><td></td></sto>	
300 326	181 206 241 266	121 146	61 86	26	Matcl ocal s 2	298 17. 296 17. 289 17. 289 17. 280 16. 279.5 16. 279.5 15. 259.5 14. 259.5 14. 245.5 14. 245.5 13. 226.5 13. 195.5 11. 195.5 11. 195.5 11. 195.5 11. 195.5 11. 195.5 11. 195.5 11. 195.5 11. 195.5 12. 22. 23. 24. 23. 26. 27. 28. 29. 20. 20. 20. 20. 20. 20. 20. 20. 20. 20	
				6 H H H	Simi 34;	399 309 309 309 309 309 309 309 309 309	
VAHD:	SAWG SPWG NGAK 	GSMR:	QIAS 	APQQ	lari Cons	117.2 117.2 117.2 116.6	
ENPOR	ALIHA PLGMV	PGTAN 	ESITIN	CANV   :	ty ervat	UNIVERSE TO TO THE STREET TO THE STREET TO TO THE STREET TO TO THE STREET TO THE STREE	
CARIL	VEGE HILL GTGN	ISADGI      ISADGI	ENTT!	\$  	y Match 85.3%; Local Similarity 84.3%; hes 284; Conservative	347 310 310 418 438 438 438 4444 4444 427 715 317 713 7713 7713 7713 7713 7713 7	
AAVAA	AAASS	ENELS MENELS	ELGKI :  :		N N	2 G75 2 D64 2 D64 2 B71 2 B71 2 B75 2 C69 2 F84 2 F75 2 T19 2 T19	
TKTO	LPAK LAPVK SRVVP	NAVA	WARL   :	AGAG AGAG	ored.	G75283 D487028 D487028 D797020 B71021 B790204 F803360 B69360 B69360 B79528 D72528 T19500	
DSKEI  - - -  DSKEI	RHTVI RHTVI ALQEI 	VASNI    :  VAGDI	ADSNI  - -:  ADSDI	ASAAN        ASAAN	143; No. smatc	2283 3058 3058 3022 1944 12244 1335 3360 3360 323 3528 3528 3520 1153 3501 3501 3501 3501 3501 3501 350	
DWVVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY   :              DWIVAHDLNPQKARILAAVAMTKTQDSKELQRIFWEY	AFKSAMGPLGMVVEGKSYMFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKA	VVVGSMRPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTB 	QVMQIASESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLBETAYFLNLVEKTDKPI                :    :    :    :	KEVENQOKLANVVILATGGTIAGAGASAANSATYQAAKYGVDKLIAGVPELADLANVRGE	Score 1432.5; D Pred. No. 3.2e-9 ; Mismatches	30 298 17.7 347 2 G75283  31 296 17.6 310 2 H87058 L-asparagia 32 289 17.2 417 2 D64302  33 289 17.2 417 2 D64302  L-asparagia	
KK	IKQIS IKQIS ILII ILII ILII ILII ILII ILII ILII I	KGVLV KGVLI	VITHO 	QAAKV	DB 2; -90; 30;	asparagin L-asparag L-asparag probable asparagin L-asparagin L-asp	
336 362	SLPQ			GVDK	н	asparaginase (EC L-asparaginase/L L-asparaginase/L L-asparaginase/L L-asparaginase L-aspar asparaginase (EC L-asparaginase (EC probable L-aspar asparaginase (EC probable L-aspar hypothetical pro hypothetical pr	
	VDIAY  :    VEIAY DOGGE	STIB  -  -	BETAY	LIAGV  :    LLASV	Length Indels	Lasp Lase programmes asp asp Lase Lase Lase programmes hypr hypr hypr hypr hypr hypr hypr hypr	
	SYGN SYGN SYGN VLRN VLRN	RDVS 	FLUL	PELA.	1 362;	asparaginase (EC 3 L-asparaginase/L-g L-asparaginase (EC 3 L-asparaginase (EC 3 asparaginase (SC 3 asparaginase (SC 3 asparaginase (ansA) L-asparaginase (ansA) L-asparaginase (EC 3 probable L-asparag asparaginase (EC 3 probable L-asparaginase (EC 3 probable L-asparagi	
	VIDIA VSDIA PAGOE 	KSINI   :	VEKTE	DIANN  :	; Gap	aginase (BC) aaraginase (BC) aaraginase (BC) aaraginase (BC) aaginase (B	
					នជា	hase (EC 3 jinase I - L-asparag L-asparag anse (EC 3 jinase [Im Jinase [EC 3 Jinase (EC 3 L-asparag	
	240 265 299 325	180 205	120 145	85	1;		
						M.J.; Br K.; Lim, tic patho	
						gg gg a a a a a a a a a a a a a a a a a	

```
C;Species: Escherichia coli
C;Species: Bscherichia coli
C;Species: Bscherichia coli
C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 09-Jul-2004
C;Accession: D85953
R;Perna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, J.D.; Rose, D.J.; Mayhew iller, L.; Grotbeck, E.J.; Davis, N.W.; Lim, A.; Dimalanta, E.; Potamousis, K.; Apodaca, Nature 409, 529-533, 2001
A;Title: Genome sequence of enterohemorrhagic Escherichia coli O157:H7.
A;Reference number: A85480; MUID:21074935; PMID:11206551
A;Accession: D85953
A;Status: preliminary
A;Residues: 1-348 <3TO>
A;Residues: 1-348 <3TO>
A;Residues: DNA
A;Residues: UNIPROT:08XCU2; GB:AE005174; NID:g12517506; PIDN:AAG58088.1; GSPDB:G
A;Sperimental source: strain O157:H7, substrain EDL933
C;Genetics:
A;Gene: ansB
C;Superfamily: asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (EC 3.5.1.38) (EC 3.5.1.38) - Acinetobacter calcoaceticus (R)Alternate names: glutaminase-asparaginase (;Species: Acinetobacter calcoaceticus (;Species: Acinetobacter calcoaceticus (;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Jul-2004 (;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Jul-2004 (;Accession: A28063 (;Accession: Accession: Ac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Reference number: A28063; MUID:88243706; PMID:3379033
A;Accession: A28063
A;Molecule type: protein
A;Residues: 1-331 <TAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: UNIPROT: P10172
A;Note: the source is designated as C;Superfamily: asparaginase C;Keywords: hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hrysanthemi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 204; Conserv
                        Best Local Si
Matches 159;
                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MYVEGKSYMFTLFAKRHTVNSEFDIKQI--SSLFQVDIAYSYGNVTDTAYKALAQNGAKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSAWGPLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NPQKARLLMALALTKTNDAKEIQNMFWNY 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          I HAGTGNGSMANYLVPEVRKLHDEQGLQIVRSSRVAQGFVLRNAEQPDDKYGWIAAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LIHAGTGNGSVSSRVVPALQELR-KNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NVVIVATGGTIAGAGASSTNSATYSAAKVPVDALIKAVPQVNDLANITGIQALQVASESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TLVEGKPYWFRSSVKKHTNNSEFNIEKIQGDALPGVQIVYGSDNMMPDAYQAFAKAGVKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                           Conservative
                      46.8%; Score 786; DB 2;
48.3%; Pred. No. 3.2e-46;
tive 59; Mismatches 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1037.5;
Pred. No. 2.2e-
52; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Acinetobacter glutaminasificans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5; DB 1;
2.2e-63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acid sequence of a glutaminase-asparagina
                                                                  2; Length 348;
                           107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
••
                      4
                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٦
;
                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Weber,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Gene:
C;Superf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 4
A98108
                                Ś
                                                                                           멍
                                                                                                                                  Ś
                                                                                                                                                                                        밁
                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                        ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
  당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EC83833
320
                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    140
                                              308
                                                                                             260
                                                                                                                                         248
                                                                                                                                                                                           200
                                                                                                                                                                                                                                          188
                                                                                                                                                                                                                                                                                                                                     129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   129
                                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                                                  69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                 DMNDDVWLTLAKKIN--TDCDKTDGFVITHGTDTMEETAYFLDLTVKCDKFVVMVGAMRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LPNITILATGGTIAGGGDSATKS-NYTAGKVGVENLVNAVPQLKDIANVKGEQVVNIGSQ
                                                                                                                                                                                                                                                                                                                   GTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA-WG 187
                                                                                                                                                                                                                                                                                                                                                                                                       SITNDDLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRP 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE
                                              NPOKARILAMVAMTKTODSKELORIFWEY 336
                                                                                                GIVSAGVGNGNLYKSVFDTLATAAKNGTAVVRSSRVPTGATTQDAEVDDAKYGFIASGTL
                                                                                                                                     ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                     PLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK
                                                                                                                                                                                                                                                                                      STSMSADGPFNLYNAVVTAADKASANRGVLVVMNDTVLDGRDVTKTNTTDVATFKSVNYG
NPQKARVLLQLALTQTKDPQQIQQIFNQY
                                                                                                                                                                                        PLGYTHNGKIDYQRTPARKHTSDTPFDVSKLNBLPKVGIVYNYANASDLPAKALVDAGYD
```

6

307

259

247

199

139

81

```
NPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                           GIVSAGVGNGNLYKSVFDTLATAAKNGTAVVRSSRVPTGATTQDAEVDDAKYGFIASGTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                               STSMSADGPFNLYNAVVTAADKASANRGVLVVMNDTVLDGRDVTKTNTTDVATFKSVNYG
                                                                                                                                                                                                                                                                                                        GTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAPKSA-WG
                                                                                                                                                                                                                                                                                                                                                                         DMNDDVWLTLAKKIN--TDCDKTDGFVITHGTDTMESTAYFLDLTVKCDKFVVMVGAMRP
                                                                                                                                                                                                                                                                                                                                                                                                          SITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRP 128
NPQKARVLLQLALTQTKDPQQIQQIFNQY
                                                                                                                                    ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                          PLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK 247
                                                                                                                                                                                    PLGYTHNGKIDYQRTPARKHTSDTPFDVSKLNBLPKVGIVYNYANASDLPAKALVDAGYD
348
                                                                                                                                         307
                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                             187
                                                                                                                                                                                                                                                                                                                                                                         139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  81
                                                                                                                                                                                    259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89
```

R;Hayashi, T.; Makino, K.; Ohnishi, M.; Kurokawa, K.; Ishii, K.; Yokoyama, K.; I gasawara, N.; Yasunaga, T.; Kuhara, S.; Shiba, T.; Hattori, M.; Shinagawa, H. DNA Res. 8, 11-22, 2001 A;Title: Complete genome sequence of enterohemorrhagic Escherichia coli O157:H7 A;Reference number: A99629; MUID:21156231; PMID:11258796 A;Accession: A98108 periplasmic L-asparaginase II [imported] - Escherichia coli (strain O157:H7 C;Species: Escherichia coli C;Date: 18-Jul-2001 #sequence\_revision 18-Jul-2001 #text\_change 09-Jul-2004 C;Accession: A98108 A;Molecule type: DNA A;Residues: 1-348 <HAY> A;Residues: 1-348 <HAY> A;Cross-references: UNIPROT:08XCU2; GB:BA000007; PIDN:BAB37256.1; PID:gl3363305; GSPDB:GN A;Experimental source: strain O157:H7, substrain RIMD 0509952 1 46.8%; Similarity 48.3%; asparaginase Conservative ; Score 786; DB 2; ; Pred. No. 3.2e-46; 59; Mismatches 107 Escherichia coli (strain 0157:H7, 107; Indels Length 348 4 Gaps substrain Han, and genon C.G.; 꼰

```
A, Map position: 64 min
C, Complex: homotetramer
C, Function:
C, Function: EC 3.5.1
                                                                                                                                                                                                           A;Description: EC 3.5.1.1 [validated, MUID:90170867]; catalyzes the hydrolysis of aspara A;Note: has a higher affinity for asparagine than asparaginase I (PIR:XDECI)
A;Note: positively regulated by cAMP receptor protein (CRP) (PIR:QRECC) and by FNR prote C;Superfamily: asparaginase
C;Keywords: extracellular protein; homotetramer; hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A,Molecule type: protein
A,Reesidues: 23-48,'A',50-85,'D',87-131,133-155,157-170,172-205,'D',207-267,'D',269-273,'
R,Peterson, R.G.; Richards, F.F.; Handschumacher, R.E.
J. Biol. Chem. 252, 2072-2076, 1977
A,Title: Structure of peptide from active site region of Escherichia coli L-asparaginase
A,Reference number: A32655; MUID:77140944; PMID:321449
A,Contents: annotation; active site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Greenquist, A.C.; Wriston Jr., J.C.
Arch. Biochem. Blophys. 152, 280-286, 1972
A;Title: Chemical evidence for identical subunits in L-asparginase
A;Reference number: A37451; MUID:73007901; PMID:4561256
A;Contents: annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:M34234; NID:g145276; PIDN:AAA23445.1; A;Experimental source: strain K12 JM108 R;Maita, T.; Mateuda, G. Hoppe-Seyler's Z. Physiol. Chem. 361, 105-117, 1980 A;Title: The primary structure of L-asparaginase from Escheria,Reference number: A01000; MUID:80135739; PMID:6766894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          J. Bacteriol. 172, 1491-1498, 1990
A;Title: Analysis of the Bscherichia coli gene encoding A;Reference number: A35132; MUID:90170867; PMID:2407723 A;Accession: A35132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           asparaginase (EC 3.5.1.1) II precursor [validated] - Escherichia coli (strain C/Species: Escherichia coli
                                                                                                                                    P;1-22/Domain: signal sequence #status predicted <SIG>
P;23-348/Product: asparaginase #status experimental <MAT>
P;99-127/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Experimental source: strain C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A, Molecule type: DNA
A, Residues: 1-348 <BLAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: preliminary; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Science 277, 1453-1462, 1997
A;Titlu: The complete genome sequence of Escherichia coli
A;Reference number: A64720; MUID:97426617; PMID:9278503
A;Accession: D65081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Note: the cysteine residues were quantitated and shown to f R; Blattner, F.R.; Plunkett III, G.; Bloch, C.A.; Perna, N.T.; A.; Rose, D.J.; Mau, B.; Shao, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A, Accession: A01000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A, Residues: 1-348 <BON>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A, Accession: JU0301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gene 91, 101-105, 1990
A,Title: L-Amparaginase II of Escherichia coli K-12: cloning,
A,Reference number: JU0301, MUID:90382683; PMID:2144836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: UNIPROT:P00805; EMBL:X52540 R;Bonthron, D.T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1-348 < JEN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R, Jenninge, M.P., Beacham,
                                                                                                                                                                                                                                                                                                                                                                                          Complex: homotetramer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;Cross-references: GB:AE000378; GB:U00096; NID:g1789319; PIDN:AAC75994.1; PID:g1789327
;Experimental source: strain K-12, substrain MG1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Date: 24-Apr-1984 #sequence_revision 31-Dec-1990 #text_change 09-Jul-2004
Accession: A35132, JU0301; A01000, D65081
                         Local Similarity
                                                                                                             Ser
                                                                                                          #status experimental
                         46.0%; Score 772; DB 1;
47.7%; Pred. No. 2.9e-45;
  Mismatches
                                                   DB 1; Length 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Escherichia
  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    L-asparaginase II, ansB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               K-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             form intrachain bonds .; Burland, V.; Riley,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PID:g145277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mapping and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequencing
  ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          K-12)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0£
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ն
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                       श्
                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
```

```
asparaginase (BC 3.5.1.1) - Wolinella succinogenes
C;Species: Wolinella succinogenes
C;Species: Wolinella succinogenes
C;Apate: 04-Dec-1997 #sequence revision 12-Dec-1997 #text_change 09-Jul-2004
C;Accession: $74205; $52788; $57754
R;Lubkowski, J; Palm, G,J.; Gilliland, G.L.; Derst, C.; Roehm, K.H.; Wlodawer, A.
Rillickowski, J; Palm, G,J.; Gilliland, G.L.; Derst, C.; Roehm, K.H.; Wlodawer, A.
Rur. J. Biochem. 241, 201-207, 1996
A;Title: Crystal structure and amino acid sequence of Wolinella succinogenes L-asparagina
A;Reference number: $74204; MUID:97054610; PMID:8898907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
S74205
                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Gene: ansA
C;Superfamily: asparaginase
C;Keywords: homotetramer; hydrolase
F;14,93,94,166/Active site: Thr, Thr,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type: DNA
A;Residues: 1-330 cDER>
A;Cross-references: EMBL:X83689; NID:g758651; PIDN:CAA58658.1; PID:g758652
                                                                      문
                                                                                                                                                                   문
                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: S52788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R; Derst,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: UNIPROT:P50286; EMBL:X89215; NID:g895917; PIDN:CAA61503.1; PID:g89591A;Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Accession: S74205
A;Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: S52788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    submitted to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Residues: 1-330 < LUB>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                              Match 45.5%; Score 765; DB 2; Local Similarity 49.4%; Pred. No. 8.1e-45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C.; Roehm,
                             191
                                                                           125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             129
                                                                                                                                                                   65
                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23
                                                                                                                                                                                                                  72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LPNITILATGGTIAGGGDSATKS-NYTVGKVGVENLVNAVPQLKDIANVKGEQVVNIGSQ
MVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAKALI
                                                                                                    MSADGMINIYNAVAVASNKDSRGKGVIVTMNDEIQSGRDVSKSINIKTEAFKSA-WGPIG
                                                                                                                                                                      GKVWLKLAKRVNELLAQKETEAVIITHGTDTMEETAFFLNLTVKSQKPVVLVGAMRPGSS
                                                                                                                                                                                                               NDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRPGTA 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NPOKARILAMVAMTKTODSKELORIFWEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GIVSÄGVGNGNLYKSVFDTLATAAKTGTAVVRSSRVFTGATTQDAEVDDAKYGFVASGTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLGMVVEGKSYWFRLPAKRHTVNSEPDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTAMSADGMINIYNAVAVASNKOSRGKGVLVTMNDBIQSGRDVSKSINIKTBAFKSA-WG 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMRP 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE
                                                                           MSADGPMNLYNAVNVAINKASTNKGVVIVMNDEIHAARBATKLNTTAVNAFASPNTGKIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NPQKARVLLQLALTQTKDPQQIQQIFNQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STSMSADGPFNLYNAVVTAADKASANRGVLVVMNDTVLDGRDVTKTNTTDVATFKSVNYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DMNDNVWLTLAKKIN--TDCDKTDGFVITHGTDTMEETAYFLDLTVKCDKFVVMVGAMRP 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL Data Library, January 1995
loning and sequencing of L-asparaginase from Wolinella succinogenes
                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X.H.
                                                                                                                                                                                                                                                                                                                                                        51;
                                                                                                                                                                                                                                                                                                                                                             Mismatches 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Asp, Lys #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         336
                                                                                                                                                                                                                                                                                                                                                                                                    Length 330;
                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                      124
                                                                                                                                                                                                                                                                64
                                                                           184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                               250
                                                                                                                          190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          319
                                                                                                                                                                                                                                                                                                               71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
```

```
asparaginase (EC 3.5.1.1) II precursor -
C,Specias: Haemophilus influenzae
C,Date: 18-Aug-1995 #sequence_revision 18
C,Accession: A64090
R,Fleischmann, R.D.; Adams, M.D.; White,
Gocayne, J.D.; Scott, J.; Shirley, R.;
C.M.; Brandon, R.C.; Fine, L.D.; Fritch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     asparaginase (EC 3.5.1.1) - Salmonella enterica subsp. enterica serovar Typhi (st c/Species: Salmonella enterica subsp. enterica serovar Typhi A/Note: this species has also been called Salmonella typhi C;Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change 18-Nov-2002 C/Accession: AB0879
R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, J.; Ch th, T.; Connerton, P.; Cronin, A.; Davis, P.; Davies, R.M.; Dowd, L.; White, N.; S.; Moule, S.; O'Gaora, P.
Nature 413, 848-852, 2001
A;Authors: Parry, C.; Quail, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Steve A;Title: Complete genome sequence of a multiple drug resistant Salmonella enteric A;Reference number: AB0502; MUID:21534947; PMID:11677608
A;Reference number: AB0502; MUID:21534947; PMID:11677608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Molecule type: DNA'
A;Residues: 1-348 <PAR>
A;Crose-references: GB:AL513382;
C;Genetics:
                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Superfamily: asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Keywords: hydrolase
                                                                                                                                                                                                                                320
                                                                                                                                                                                                                                                                                                                                                 248
                                                                                                                                                                                                                                                                                                                                                                                       200
                                                                                                                                                                                                                                                                                                                                                                                                                             188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NPQKARILAMVAMTKTQDSKBLQRIFWBY
                                                                                                                                                                                                                                                                                                                                     ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                           PLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SITNDDLLKLASSVABLADSNDVDGIVITHGTDTLBETAYFLNLVEKTDKPIVVVGSMRP 128
                                                                                                                                                                                                                                                                                                             GIVSAGVGNGNLYKTVPDTLATAAHNGTVVVRSSRVPTGATTQDAEVDDAKYGFVASGTL
                                                                                                                                                                                                                                                                                                                                                                                       PLGYIHNGKIDYQRTPERKHTTSTPFDVSKLTALPKVGIVYNYANASDLPAKALVDAGYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STSMSADGPFNLYNAVVTAADKQSANRGVLVVMNDTVMDGRDVTKTNTTDVATFKAVNYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA-WG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DMNDEVWLTLAKKINTECDS--TDGFVITHGTDTMEETAYFLDLTVKCNKPVVLVGAMRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KARILAMVAMTKTQDSKELQRIFWEY
                                                                                                                                                                                                                              NPQKARVLLQLALTQTKDPKQIQTMFNQY 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KARVLLMLALTKTSDREAIQKIFSTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HAGMGNGNPFPLTQNALEKAAKSGVVVARSSRVGSGSTTQBAEVDDKKLGFVATESLNPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDLNPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TVYYGKVEYFTQSVRPHTLASEFDISKIBELPRVDILYAHPDDTDVLVNAALQAGAKGII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                45.3%;
                M.D.; White, O.; Clayton, R.A.; Kirkness, B.F.; Kerlavage, Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Weidman, L.D.; Fritchman, J.L.; Geoghagen, N.S.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIDN:CAD02930.1; PID:g16504183; GSPDB:GN00176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 761; DB 2;
Pred. No. 1.6e-44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                            18-Aug-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       336
                                                                                                                                  Haemophilus influenzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                       336
                                                                                          #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 348
                                                                                                                                  (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                  Rd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        enterica
                                                                                                                                                                                                                                                                                                                                                                                                                             247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     244
                                                                                                                                                                                                                                                                                                           319
                                                                                                                                                                                                                                                                                                                                                 307
                                                                                                                                                                                                                                                                                                                                                                                       259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   310
                                                                                                                                    KW20)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Stevens, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Churcher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sero
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ជ
```

```
A,Title: Whole-genome random sequencing and assembly of Haemophilus A,Reference number: A64000; MUID:95350630; PMID:7542800 A,Accession: A64090 A,Accession: A64090
                       S
                                                                   밁
                                                                                                       S
                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F;1-23/Domain: signal sequence #status predicted F;24-349/Product: asparaginase #status predicted F;100-128/Disulfide bonds: #status predicted
                                                                                                                                                밁
                                                                                                                                                                                                                         吊
                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-349 < TIGR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Keywords: extracellular protein; hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Superfamily: asparaginase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: UNIPROT:P43843; GB:U32758;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
315
                                 302
                                                                                                                                                  195
                                                                                                                                                                                    183
                                                                                                                                                                                                                         135
                                                                                                                                                                                                                                                   123 VGSMRPGTAMSADGMINLYNAVAVASNKDSRGKGVLVTMNDBIQSGRDVSKSINIKTEAF 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                       151;
                                                                                                                                                                                                                                                                                                     77
                                                                                                                                                                                                                                                                                                                                                                              18
                                                                                                                                                                                                                                                                                                                                      63 MQIASESITNDDLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVV 122
                                                                                                                                                                                                                                                                                                                                                                                                                  w
                                 VVAHDLNPQKARILAMVAMTKTQDSKELQRIFWEY
                                                                                         AQNGAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNABQPDDKNDW
                                                                                                                                                  HSPNYGSLGY I HNSKVDYERSPESKHT I NTPFNVEKLDSLPKVGI I YAYSNAPVEPLNAL
                                                                                                                                                                                    KSA-WGPLGMVVEGKSYWFRLPAKRHTVNSBFDIKQISSLPQVDIAYSYGNVTDTAYKAL
                                                                                                                                                                                                                                                                                                     VKIGSQDMNDEVWLKLAKAIN---AQCKSTDGFVITHGTDTMEETAYFLDLTVKCBKPVVL
                                                                                                                                                                                                                                                                                                                                                                            IANAADLPNITILATGGTIAGSGOSSVNSA-YKAGQLSIDTLIBAVPEMKNIANIKGEOI
                                                                                                                                                                                                                                                                                                                                                                                                                VENQQKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQV
                                                                     LNAGYQGI VSAGVGNGNVNAAHLDRLEKAAKDS VVVVRSSRVPTGYTTRDAEVDDSKYGF
                                                                                                                                                                                                                           VGAMRPATEKSADGPLNLYNAVVVAADKKSSGRGVLVAMNNEVLGARDVTKTSTTAVQTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acid sequence not shown; translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                     45.1%; Score 758; DB 2;
45.1%; Pred. No. 2.6e-44;
tive 74; Mismatches 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GB:L42023;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <SIG>
                                 336
                                                                                                                                                                                                                                                                                                                        <u>:</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NID:g1573747; PIDN:AAC22403.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .M.; Smith, H.O.;
nilus influenzae l
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                            301
                                                                                                                                                                                                                                                                                                     134
                                                                                                                                                                                                                                                                                                                                                                              76
                                                                                                                                                                                    241
                                                                                                                                                                                                                           194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , Venter, Rd.
```

RESULT

asparaginase (EC 3.5.1.1) yccC [similarity] - Bacillus subtilis C;Species: Bacillus subtilis C;Date: 05-Dec-1997 #sequence\_revision 05-Dec-1997 #text\_change 09-Jul-2004 C;Accession: F69754

R;Knnst, F; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Berterc C.; Bron, S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capusno, V.; Carter, N.M.; Choj A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Pabret, C.; Ferrari, B. Nature 390, 249-256, 1997

A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Gallerc iech, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F.; Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Liardinois, Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois, A.; Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Msauda, S.; Maueel, Y., M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Portetelle, Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanlon, A.; Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Serror, akeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, F.; Tognoni, A.; Tosato, V.; Uchlyama, T.; Winters, P.; Wipat, A.; Yamanoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida, K. A; Authors: Yoshikawa, H.F.; Zumstein, B.; Yoshikawa, H.; Danchin, A. A; Title: The complete genome sequence of the Gram.-positive bacterium Bacillus subtilis. A, Reference number: A69580; MUID:98044033; PMID:9384377

A;Status: preliminary; nucleic acid веquence not shown; translation not

A; Molecule type: DNA A; Residues: 1-375 < KUN>

A;Cross-references: UNIPROT:034482; GB:Z99105; A;Experimental source: strain 168 C;Genetics: GB:AL009126; NID: g2632457; PIDN: CAB12063.1

```
asparaginase (EC 3.5.1.1) precursor [imported] - Yersinia pestis (strain CO92)
C;Species: Yersinia pestis
C;Cpate: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 09-Jul-2004
C;Accession: AD0169
R;Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M.B.
deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G.;
il, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Whitehead, S.; Barrell,
Nature 413, 523-527, 2001
A;Title: Genome sequence of Yersinia pestis, the causative agent of plague.
A;Reference number: AB0001; MUID:21470413; PMID:11586360
A;Accession: AD0169
A;Status: preliminary
A;Molecule type: DNA
A;Refidues: 1-345 <KUR>
A;Cross-references: UNIPROT:08ZGB7; GB:AL590842; PIDN:CAC90215.1; PID:g15979435; GSPDB:C
C;Genetics:
A;Gene: ansB
C;Suporfamily: asparaginase
C;Keywords: hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
AD0169
                                                                                       S
                                                                                                                                     밁
                                                                                                                                                                S
                                                                                                                                                                                                      무
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Gene: yccC
C;Superfamily: asparaginase
C;Keywords: hydrolase
                                                      밁
                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cross-references: UNIPROT:Q8ZGB7, GB:AL590842; PIDN:CAC90215.1; PID:g15979435; GSPDB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matchee 158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match 45.1%;
Local Similarity 47.6%;
                        188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                107
                                                                                                                                                                                                                                                                                            tch 44.6%;
al Similarity 47.7%;
157; Conservative 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47
                                                                                                                                        82
                                                                                                                                                                            69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                   23
                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DMNDDVWLTLAKKINK--DCTKTDGFVITHGTDTLEETAYFLDLTVNCDKFVVIVGAMRP
                                                                                                                                                                        SITNDDLLKLASSVAELADSNDVDGIVITHGTDTLESTAYFLNLVEKTDKFIVVVGSMRF 128
                                                                                                                                                                                                                                         LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MRPGTAMSADGMINLYNAVAVASNKOSRGKGVLVTMNDBIQSGRDVSKSINIKTEAFKS- 184
PLGMVVEGKSYMFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGAK 247
                                                          ATALGADGPLNLYNAVVVASDADSAKRGVLVAMNDMVFTGRDVVKTNTTSVQTFQSPNTG
                                                                                     GTAMSADGMINIYNAVAVASNKDSRGKGVIVTMNDBIQSGRDVSKSINIKTBAFKSA-WG
                                                                                                                                                                                                                 LPNITLLATGGTIAGGGDSATKS-NYTAGKLGVDALVEAVPAIKDIANIQGEQVVNIGSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAKGIVFAGSGNGSLSDAAEKGADSAVKKGVTVVRSTRTGNGVVTPNQDYAB--KDLLAS 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMGFVGTIAD-DIYFNNEITRKHTKDTDFSVSNLDELFQVDIIYGYQNDGSYLFDAAVKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AWGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MRPSTAISADGPSNLYNAVKVAGAPEAKGKGTLVVLNDRIASARYVIKTNTTTTDTFKSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GSTNIDNKILLKLAKRINHLLASDDVDGIVVTHGTDTLEETAYFLNLTVKSDKPVVIVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ASESITNDDLLKLASSVABLADSNDVDGIVITHGTDTLBETAYFLNLVBKTDKPIVVVGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KKDLPNIRILATGGTIAGADQSKTSTTEYKAGVVGVESLIEAVPEMKDIANVSGEQIVNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                              54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 758; DB 2; Length 375;
Pred. No. 2.9e-44;
58; Mismatches 112; Indels
                                                                                                                                                                                                                                                                                            Score 749.5; DB 2;
Pred. No. 9.8e-44;
4; Mismatches 111;
                                                                                                                                                                                                                                                                                                                                  Length 345;
                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65
                                                            199
                                                                                                 187
                                                                                                                                        139
                                                                                                                                                                                                                   81
                                                                                                                                                                                                                                                         83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ntice, M.B.
bugan, G.;
Barrell,
```

RESULT 12 H81418

asparaginase (EC 3.5.1.1) cytoplasmic C; Species: Campylobacter jejuni

Cj0029 [imported]

Campylobacter jejuni (strain

×

```
A;Cross-references: UNIPROT: P06608; GB:M14741; GB:X14777; NID:g42965; PID A;Note: the authors translated the codon AAG for residue 286 as Leu R;Filpula, D.; Nagle, J.W.; Pulford, S.; Anderson, D.M. Nucleic Acids Res. 16, 10385, 1988

A;Title: Sequence of L-asparaginase gene from Erwinia chrysanthemi NCPPB A;Reference number: S03681; MUID:89057497; PMID:3194219

A;Accession: S03681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gene 46, 25-35, 1986
A;Title: Nucleotide sequence of the Erwinia chrysanthemi NCPPB 1066 L-asparaginase A;Reference number: A26054; MUID:87106840; PMID:3026924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Accession: A26054; S03681

R;Minton, N.P.; Bullman, H.M.S.; Scawen, M.D.; Atkinson, T.; Gilbert, Gene 46, 25-35, 1986
                                                                                                                                     δ
                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P;1-21/Domain: signal sequence #status predicted <SIG>
F;22-348/Product: asparaginase #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Superfamily: asparaginase C;Keywords: hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: DNA
A;Residues: 1-176,'I',178-198,'R',200-287,'L',289-294,'M',296-348 <FIL>
A;Cross-references: GB:X12746; NID:g40993; PIDN:CAA31239.1; PID:g40994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         asparaginase (EC 3.5.1.1) precursor - Brwinia chrysanthemi
C;Species: Erwinia chrysanthemi
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                           S
                                                                                        밁
                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-348 <MIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: A26054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 156; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match 44.6%; Score 749; DB 1; Local Similarity 47.3%; Pred. No. 1.1e-43;
                                             307
                                                                                          264
                                                                                                                                          247
                                                                                                                                                                                          204
                                                                                                                                                                                                                                          187
                                                                                                                                                                                                                                                                                       144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                LNPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                GPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGA 246
                                                                                                                                                                                                                                                                                       PATAISADGPMNLLEAVRVAGDKQSRGRGVMVVLNDRIGSARYITKINASTLDTFKANEE
                                                                                                                                                                                                                                                                                                                                                                                                                                     ESITNDDLLKLASSVABLADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSMR 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KLANVVI LATGGT I AGAGASAANSATYQAAKVGVDKL I AGVPELADLANVRGEQVMQI AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLGYIYDGKVNYLHQPAARQLA---FDISKLNTLPKVGIIYNYANASDIPAKALIADGYQ
LNPAHARILLMLALTRTSDPKVIQEYFHTY
                                                                                               KGIVYAGMGAGSVSVRGIAGMRKAMEKGVVVIRSTRTGNGIV-----PPDEELPGLVSDS
                                                                                                                                        KALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHD 306
                                                                                                                                                                                          GYLGVIIGNRIYYQNRIDKLHTTRSVFDVRGLTSLPKVDILYGYQDDPEYLYDAAIQHGV
                                                                                                                                                                                                                                                                                                                                     PGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFK-SAW 186
                                                                                                                                                                                                                                                                                                                                                                                       ENMTGDVVLKLSQRVNELLARDDVDGVVITHGTDTVEESAYFLHLTVKSDKPVVFVAAMR 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KLPNIVILATGGTIAGSAATGTQTTGYKAGALGVDTLINAVPEVKKLANVKGEQFSNMAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NPQKARVILQLALTQTQKPQEIQKLFHTY 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NPOKARILAMVAMTKTODSKELORIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GIVSAGVGNGNLYHTVFDTLATAASHGVAVVRSSRVPSGSTTEGAEIDDAKYGFVAAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63; Mismatches 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NID:g42965; PIDN:CAA32884.1; 286 as Leu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                          203
                                                                                               318
                                                                                                                                                                                             263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene.
```

פ

```
C;Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 09-Jul-2004
C;Accession: H81418
R;Parkhill, J.; Wren, B.W.; Mungall, K.; Ketley, J.M.; Churcher, C.; Basham, D.; Chillir C.W.; Quail, M.; Rajandream, M.A.; Rutherford, K.M.; VanVliet, A.; Whitehead, S.; Barrel Nature 403, 665-668, 2000
A;Title: The genome sequence of the food-borne pathogen Campylobacter jejuni reveals hyp A;Reference number: A81250; MUID:20150912; PMID:10688204
A;Accession: H81418
A;Accession: H81418
A;Residues: preliminary
A;Molecule type: DNA
A;Residues: 1-331 <PAR>
A;Cross-references: UNIPROT:Q9DJ82; GB:AL139074; GB:AL111168; NID:g6967505; PIDN:CAB7252
A;Experimental source: serotype O2, strain NCTC 11168
C;Genetics:
A;Gene: ansA; Cj0029
C;Superfamily: asparaginase
C;Keywords: hydrolase
્રેફ
                                                                                                                                                                                                               asparaginase (BC 3.5.1.1) II [similarity] - Helicobacter pylori (strain 26695)
c;Species: Helicobacter pylori
C;Date: 09-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 09-Jul-2004
C;Accession: C64610
C;Accession: C64610
R;Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D.
Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenne
son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L.
A;Authors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C.
A;Title: The complete genome sequence of the gastric pathogen Helicobacter pylori.
A;Reference number: A64520; MUID:97394467; PMID:9252185
A;Accession: C64610
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Residues: 1-330 <TOM>
A;Residues: 1-30 <TOM
A;Residues: 1-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
C64610
                                                                                                                                                    A;Cross-references: UNIPROT:025424; GB:AE000585; GB:AE000511; NID:g2313845; PIDN:AAD077'C;Superfamily: asparaginase
C;Keywords: hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                   Query Match
Best Local Similarity
Matches 148; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match 44.0%;
Local Similarity 46.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10 ANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NPQKARILAMVAMTKTQDSKELQRIFWEY 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LGMVVEGKSYMFRLPAKRHTVNSEFDIKQISSLPQVDIAYSYGN-VTDTAYKALAQNGAK 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAMSADGMLNLYNAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA-WGP 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MCDEIWLRLAKKIAKLF-AEGIDGVVITHGTDTMEETAYFLNLTIKSDKPVVLVGAMRPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ITNDDLLKLASSVABLADSNDVDGIVITHGTDTLEBTAYFLNLVEKTDKPIVVVGSMRPG 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GIVVAGSGAGSIHKNOKDVLKELLKKGLKVVVSSRVVAGCVA--VSDSDEKLGFISAEDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVAHDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LGYIVDGKVFFYNNVIKAHTKNAPFDVSKLTSLPKVDILYSYSNDGSGVAAKALFEHGTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SRIAILGTGGTIAGFIDSTIATTGYAAGAIDIDVLIKAVPQIRDLADISWEQIANIDSSN
            QKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NPQKARVLLMLALTKTSDPKKIQEYFLKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                              42.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       70;
                                                          75;
                                                        Score 717; DB
Pred. No. 1.5e-
75; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 739.5; DB 2;
Pred. No. 4.4e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches 102;
                                                                              DB 2;
1.5e-41;
                                                          103;
                                                                                                    Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 331;
                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>ب</u>
                                                        6
                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          124
              66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69
                                                          5
                                                                                                                     8
                                                                                                                                                                             당. 성
                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Gene: ansB
C;Superfamily: asparaginase
C;Keywords: hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                  S
                                                                                   닭
                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Status: preliminary
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Residues: 1-332 < ARN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182
                                       305
                                                                                                                              245
                                                                                                                                                                               182
                                                                                                                                                                                                                              186
                                                                                                                                                                                                                                                                       122
                                                                                                                                                                                                                                                                                                                        127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122
                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                    HDLNPQKARILAMVAMTKTQDSKELQRIFWEY
```

```
C;Accession: D71904

R;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.; Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.B.; Vovis, G.F.; Nature 397, 176-180, 1999

A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric pathc A;Reference number: A71800; MUID:99120557; PMID:9923682

A;Accession: D71904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           asparaginase (EC 3.5.1.1) II [similarity] - Helicobacter pylori (strain J99 C;Species: Helicobacter pylori A;Variety: strain J99 A;Variety: strain J99 C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004 C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: UNIPROT:Q9ZLB9; GB:AE001498; GB:AE001439; NID:g4155211; PIDN:AAD06238
A;Experimental source: strain J99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      305 HDLNPQKARILAMVAMTKTQDSKELQRIFWEY 336
||||||||:| :|:||:|:|||
299 DNLNPQKARVLLQLALTKTNNKEKIQEMFEEY 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          186 WGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISS-LPQVDIAYSYGNVIDTAYKALAQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                127 RPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKSA- 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QNLPTIALLATGGTIAGSGAS-ASLGSYKSGELGIKELLKAIPSLNRLARIQGEQISNIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HAKGVVIAGVGNGNVSAGFLKAMQEASQMGVVIVRSSRVNSGEI--TSGEIDDK-AFITS 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SQDMNEEVWFKLAKRAQELLDDSRIQGVVITHGTDTLEESAYFLNLVLRSTKPVVLVGAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSM 126
                                       GAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVA
                                                                                                                                                                  WGPLGMVVEGKSYWFRLPAKRHTVNSEFDIKQISS-LPQVDIAYSYGNVTDTAYKALAQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QNLPTIALLATGGTIAGSGVD-ASLGSYKSGELGVKELLKAIPSLNKIARIQGEQVSNIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SGAIGSVYYGKTRYYMQPLRKHTTESEFSLSQLKTPLPKVDIIYTHAGMTPDLFQASLNS
                                                                                                                                         SGAIGSVYYGKTRYYMQPLRKHTTESEFSLSQLKTPLPKVDIIYTHAGMTPDLFQASLNS
                                                                                                                                                                                                                                                                               RNASSLSADGALNLYYAVSVAVNEKSANKGVLVVMDDTIFRVREVVKTHTTHISTFKALN 181
                                                                                                                                                                                                                                                                                                                              RPGTAMSADGMLNLYNAVAVASNKDSRGKGVLVTWNDBIQSGRDVSKSINIKTEAFKSA- 185
                                                                                                                                                                                                                                                                                                                                                                                                                     SQDMNBEIWFKLAQRAQELLDDSRIQGVVITHGTDTLBESAYFLNLVLHSTKPVVLVGAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SESITNDDLLKLASSVAELADSNDVDGIVITHGTDTLEETAYFLNLVEKTDKPIVVVGSM 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QKLANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVKGEQVMQIA 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAKALIHAGTGNGSVSSRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKNDWVVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RNAASLSADGALNLYNAVSVALNEKSANKGVLVVMDDNIFSAREVIKTHTTHTSTFKALN 181
HAKGVVIAGVGNGNVSAGFLKAMQEASQMGVVIVRSSRVGSGGV-TSGEIDDKAYGFITS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40.9%; Score 687; DB 2; illarity 43.7%; Pred. No. 1.7e-39; Conservative 70; Mismatches 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        304
                                                                        304
                                                                                                                                                                                                              244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
       300
                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
```

```
$
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                             F
                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
Search completed: March 18, 2005, 21:33:21 Job time: 43 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Map position: 1
C;Superfamily: asparaginase
C;Keywords: hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Zimmermann, W.; Wambutt, R.; McDougall, R.C.; Rajandream, M.A.; Barrell, B.G.
submitted to the EMBL Data Library, January 2000
A;Reference number: Z25053
A;Accession: T50284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      asparaginase (EC 3.5.1.1) precursor [similarity] - fission yeast (Schizosaccharomyces pc
C/Species: Schizosaccharomyces pombe
C/Date: 09-Jun-2000 #sequence_revision 09-Jun-2000 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A/Gene: SPDB:SPAC977.12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Status: preliminary; translated from GB/EMBL/DDBJ
,Molecule type: DNA
,Molecule type: DNA
,Residues: 1-356 <2IM>
,Cross-references: UNIPROT:Q9UTS7; EMBL:AL137130; PIDN:CAB69634.1; GSPDB:GN00066; SPDB
,Experimental source: strain 972h(-); cosmid c977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 32.7%; Score 550; DB 2; Length 356; Best Local Similarity 41.0%; Pred. No. 4e-30; Matches 136; Conservative 56; Mismatches 120; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Accession: T50284
                                                                                                        322 IPSYFLNPQKARYMLMIAISSGYSIRDIEDLF 353
                                                                                                                                                      302 VVAHDLNPQKARILAMVAMTKTQDSKELQRIF 333
                                                                                                                                                                                                                       273
                                                                                                                                                                                                                                                                                                                                                                                                                                         154
                                                                                                                                                                                                                                                                    247 KALIHAGTGNGSVS---SRVVPALQELRKNGVQIIRSSRQQGGFVLRNAEQPDDKND--W 301
                                                                                                                                                                                                                                                                                                                                                                                187 GPLGMVVEGKSYWFRLPAKRHTVNSBFDIKQISSLPQVDIAYSYGNVTDTAYKALAQNGA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        128 PGTAMSADGMINLYNAVAVASNKDSRGKGVLVTMNDEIQSGRDVSKSINIKTEAFKS-AW 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 DNLNPQKARVLLQLALTKTNDKAKIQEMFEEY 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69 SITNDDLLKLASSV-AELADSNDVDGIVITHGTDTLEETAYFINLVEKTDKPIVVVGSMR 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35 LPNVTVFAMGGTIAGCANSSLEIVNYIPGSVGIEKLIEAVPAIKAIANINGVQVTNMGSE 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95 NLTPADVLKLAKLILAEVAKPN-VHGIVITHGTDSLEETAMFLDLTISTAKPIVVVGAMR 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                             GSLGIVLNQKPFYFFSPAV-PTGKVFFDIYNIKQLPRVDILYGYQGLNPKLAESAVHLGA 272
                                                                                                                                                                                                                                                                                                                                                                                                                                         PSTAIGADGPMNILNAVAVASSNOSMGRGTLVLLNDRIGSAFYTTKTNGNTLDTFKSYEA 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LANVVILATGGTIAGAGASAANSATYQAAKVGVDKLIAGVPELADLANVRGEQVMQIASE 68
                                                                                                                                                                                                                 KGLVLAAMGATSWTDDGNEVISSL--IREHNIPVVYSHRTAEGY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
```

Ihis Page Blank (uspto)